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The Heirs of Avicenna: Philosophy in the Islamic East, 12–13th Centuries

Logic and Epistemology

Peter Adamson, Fedor Benevich and Dustin Klinger

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Islamicate Intellectual History

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Logic and Epistemology

By

Peter Adamson
Fedor Benevich
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Cover illustration: Logical diagram from Shams al-Dīn al-Kātibī al-Qazwīnī, Munaṣṣaṣ fī sharḥ al-Mulakhkhaṣ, ms Sehid Ali Pasa 1860.

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Contributors

Chapters 1, 2, 8, 9, 10, 11, 12, and 13 were prepared by Dustin Klinger.
Chapters 3 and 4 were prepared by Nora Kalbarczyk.
Chapter 5 was prepared by Alexander Kalbarczyk.
Chapters 6, 7, 14, 15, and 16 were prepared by Fedor Benevich.
Chapter 17 was prepared by Hassan Resakhany.

Introduction

Abū ʿAlī Ibn Sīnā (d. 428AH, 1037CE), usually known in English by his Latin name Avicenna, was the most influential thinker of the Islamic world. This book is the second volume in a series devoted to charting just a part of that influence, albeit the part when his direct impact was greatest. Indirectly, one can fairly say that philosophy in the Islamic world was done within a broadly Avicennan framework right down to the 19th century. Roughly speaking, our chronological span is the 12–13th centuries CE. More specifically, we begin after the death of al-Ghazālī in 1111CE and end with the circle of thinkers gathered around Naṣīr al-Dīn al-Ṭūsī. As in the first volume, for reasons of time, space, and coherence we focus on the Islamic East. That first volume, which appeared in 2023, was devoted to topics in metaphysics and philosophical theology. Here we turn to the disciplines that Avicenna himself might have suggested starting with: logic and epistemology. He does, after all, follow the late ancient and previous Arabic philosophical tradition by treating logic as the introductory philosophical discipline. This is already the case in his first general *summa* of philosophy, the *Philosophy for ʿArūḍī* (*al-Ḥikma al-ʿArūḍiyya*), and logic is also treated first in his *magnum opus*, the *Healing* (*al-Shifāʾ*), and in his difficult but much-read final *summa*, the *Pointers and Reminders* (*al-Ishārāt wa l-tanbīhāt*).[1] The points made in Avicenna's logic ramify through his whole philosophy, so that no one who fails to come to grips with this part of his thought can fully understand his work on topics like metaphysics or the soul. Those who responded to Avicenna were fully aware of the importance of the topic, and duly devoted intense reflection to his syllogistic theory and other issues closely related to logic, including philosophy of language and epistemology.[2]

We ourselves are following late ancient precedent by covering in this volume more or less the range of topics that would have been dealt with under the heading of the logical corpus or *organon* in the Aristotelian tradition. This explains why the themes covered here may seem somewhat disparate from a contemporary philosophical point of view. In particular, our chapters on the

1 For Avicenna's works and their structure see D. Gutas, *Avicenna and the Aristotelian Tradition: Introduction to Reading Avicenna's Philosophical Works* (Leiden: 1988, 2nd revised ed. 2014), part one section 2.

2 For a good starting point on reactions to the core logical theory, see T. Street, "Medieval and Modern Interpretations of Avicenna's Modal Syllogistic," in F. Opwis and D.C Reisman (eds), *Islamic Philosophy, Science, Culture, and Religion: Essays in Honor of Dimitri Gutas* (Leiden: 2012), 232–256.

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nature of knowledge might seem more related to philosophy of mind, and therefore to belong in the following volume, which will include chapters on soul and intellect. Ultimately though, Avicenna approaches epistemology from the perspective of Aristotle's *Posterior Analytics*, called simply *Demonstration* (*Burhān*) in Arabic,[3] so it makes some sense to have material on knowledge in the same volume as the material on the *Organon* in general, and demonstration theory in particular (Chapter 13). Similarly, topics like semantic reference are covered in Aristotle's *On Interpretation* and the corresponding part of Avicenna's *Shifāʾ* (the *Ibāra*), while paradoxes, the topic of our final chapter, are traditionally dealt with under "sophistic," though this is more reliably true in the Latin tradition than in the Arabic one. If this provides us with a historical justification for grouping all this material into a single book, a philosophical rationale may be found with the central role that conception (*taṣawwur*) and assent (*taṣdīq*) will play throughout. This terminological contrast, originally introduced by al-Fārābī, becomes definitive of logic itself,[4] and the nature of knowledge—even from a psychological perspective—often plays a crucial role in explaining the relation between conception and assent for post-Avicennan philosophers.

In the previous volume, there was almost no need to insist upon the pioneering nature of Avicenna's achievement. The novelty and influence of such ideas as the essence-existence distinction, mental existence, and God as the Necessary Existent more or less speak for themselves. When it comes to logic and epistemology, by contrast, an appreciation of the Avicenna's innovations has been restricted to a smaller circle of specialists. This is unsurprising given the often technical nature of Avicenna's advances. His distinctive ideas will of course be charted in detail in the rest of the volume, and a first impression can be had by reading the introductions to each chapter (especially the first part of each introduction, since we usually start by outlining the views of Avicenna

3 For an important study of Avicenna's theory of demonstration see R. Strobino, *Avicenna's Theory of Science: Logic, Metaphysics, Epistemology* (Oakland: 2021). The fact that knowledge is associated both with Avicenna's philosophy of mind and his "logic" (in the section on demonstration) reflects a tension in epistemology going back to Aristotle. One of the central problems he bequeathed to posterity is that he discussed knowledge in very different ways in *On the Soul* and in the *Posterior Analytics*: it is no easy matter to say how the soul's "reception of form" in the former context could be the same phenomenon as understanding propositions as the conclusion of a demonstrative syllogism in the latter context. In order to grasp the full dimensions of Avicenna's epistemology and its reception, readers will thus need to consult both this and the following volume.

4 Al-Khūnajī says that the "objects of conception and assent" are its subject matter at [T14] of our chapter on the Subject Matter of Logic.

that prompted controversy, modification, and defense). But we should say just a little here to prepare the reader for what is to come.

As Khaled El-Rouayheb has succinctly explained in his invaluable recent overview of post-Avicennan Arabic logic, there are several crucial respects in which Avicenna's logic differs from previous Aristotelian logic, even if it is grounded in that tradition and carries on innovations made by earlier thinkers, especially al-Fārābī.[5] First, and as we explain more fully in the introduction to the Modal Syllogistic chapter below, for him all propositions have some "modality," even if this is left unstated. Thus an apparently "plain" statement not marked as necessary or possible, like "Socrates is walking," would for Avicenna be considered an "absolute" proposition. For him, this means that the proposition asserts the predication of walking for Socrates *at least once*.

Second, Avicenna works to integrate into a generally Aristotelian framework inferences of the kind that were studied in antiquity not by Aristotle, but by the Stoics. An example would be good old *modus ponens*: If A then B, but A, therefore B. Avicenna applies quantification here too, so that hypothetical syllogistic becomes modalized just like predicative logic. To use the same example, Avicenna might take the syllogism:

> If Socrates is walking, then Socrates is moving
> But Socrates is walking
> Therefore Socrates is moving

and say that the second premise is "absolute," and should be read as "Socrates is walking at least once," licensing the conclusion "Socrates is moving at least once." And the same for other modalities, like necessity, possibility, perpetuity (what is always the case), etc. Also, Avicenna incorporates predicative statements into hypothetical argument forms by considering inferences like this one:

> If A is B, then C is D
> If C is D, then E is F
> Therefore if A is B, then E is F

Here the proposition "C is D" plays the role of a "middle term" in a typical predicative syllogism (like Y in "All X is Y, all Y is Z, therefore all X is Z").[6]

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5 K. El-Rouayheb, *The Development of Arabic Logic* (*1200–1800*) (Basel: 2019), 22–24.

6 In these examples one is to read e.g. "X is Y" as meaning "Y is said of X," which is why the propositions are "predicative."

Third, Avicenna introduces an important distinction between two ways that a proposition can be interpreted: substantially (*dhātī*) or descriptionally (*waṣfī*). Here the idea is that some predicates belong to their subject as such, while others only belong to it when the subject is described a certain way. For example it is only true under a description that Socrates is moving, e.g. so long as he is walking. But it is true "substantially" that Socrates is rational since this belongs to him in himself. This is important for several reasons; one of them is that it explains how science can be charged with understanding accidental properties. Consider the same example of walking and moving. Since science should concern itself with necessary and universal propositions that are always true, it is not at first clear how a scientific demonstration could say anything about these features—after all nothing is walking necessarily or always. But it is necessarily and always true that anything walking is moving, *so long as* it is walking (that is, when it is "described" as walking). So in the *waṣfī* reading, "whatever is walking is moving" becomes a perfectly respectable scientific truth, one that could be "demonstrated" in the strict and proper sense.

If this represents an expansion of logic's remit, a final change undertaken by Avicenna, which we deal with in our fifth chapter, is that he *narrows* the scope of logic in another way. In part precisely because he takes so seriously the traditional idea that logic culminates with the theory of demonstration, he makes certain parts of the *organon* no longer a part of logic. In particular, he rejects the relevance of the *Categories*—a significant step, since philosophers had been treating this as the first treatise of logic (apart from Porphyry's general introduction) for the better part of a millenium. Having said that, he does make a concession to tradition by retaining a section on the categories in his works on logic.

As the post-Avicennan tradition evolved, it became even more focused on the issues that we would nowadays expect to discuss under the heading of "logic." Basically this would take in theory of the proposition, argument forms and their validity, modalities, and invalid arguments. In a development that would surely have dismayed Avicenna himself, his heirs become increasingly uninterested in scientific demonstration, touching upon it only briefly or not at all. Effectively, logic becomes a study of the issues connected to syllogistic (what is covered in Aristotle's *Prior Analytics*, and correspondingly Avicenna's *Qiyās*), not issues connected to science and epistemology (what is covered in Aristotle's *Posterior Analytics*, and correspondingly Avicenna's *Burhān*). This is remarkable, since as we have said demonstration was for Avicenna, as for al-Fārābī, the members of the Baghdad School of Aristotelians, and late ancient commentators, really the whole point of the logical project.

It is an interesting historical question why post-Avicennan logic becomes so exclusively focused on what we might now think of as the "core" of logic. One hypothesis could be that logic was seen as important for such culturally resonant activities as legal reasoning. This is not something we have attempted to represent systematically, though we make some reference to it in chapter 4 and quote a few exemplary texts. Logic became a standard part of education for jurists and religious scholars in this period, something comparable to what we find in European Christendom, from the contemporaneous schools and universities of the 12th and 13th centuries down to Jesuit "colleges" beginning in the 16th century.[7] A sign of logic's pedagogical importance is the production of handbooks or overviews of logic by authors like al-Khūnajī, al-Urmawī, and al-Kātibī, whose *Epistle for Shams al-Dīn* (*al-Risāla al-Shamsiyya*) would become a standard text used for centuries to come.[8]

These logicians were not content merely to repeat Avicenna's logic and present it in more accessible form. To the contrary, this was a stunningly original period in the history of logic, something that can again be compared to what we see in the somewhat later Latin scholastic tradition. While the innovations cannot be credited to just one individual, there is a figure who emerges as the most original mind of the period: al-Khūnajī, rightly called by El-Rouayheb "arguably second only to Avicenna in the history of Arabic logic."[9] In a stark contrast with the previous volume, where we did not translate a single passage from his works, here he plays a leading role in every chapter on the core areas of logic. In this respect he occupies something like the place of Fakhr al-Dīn al-Rāzī in our survey of metaphysics in the period. More than anyone else, it is around al-Khūnajī that the debate in logic revolved. Impressively, though, al-Rāzī is another one of the main figures, from whom we will be quoting extensively on all issues in logic, philosophy of language, and epistemology. To give just one example of his significance, it was al-Rāzī who introduced the key distinction between *ḥaqīqī* and *khārijī* ("essentialist" and "externalist") readings of a proposition. On the latter reading, "A is B" is true only if B is said of A in extramental reality, whereas on the *ḥaqīqī* reading, "A is B" is true just in respect of a essential connection between A and B. As al-Rāzī says, "A is B" is true *ḥaqīqī* regardless of whether A exists extramentally; it suffices that if A

7 A classic study of this parallel is G. Makdisi, *The Rise of Colleges: Institutions of Learning in Islam and the West* (Edinburgh: 1981).

8 See now T. Street, *Najm al-Dīn al-Kātibī's al-Risālah al-Shamsiyyah: an Edition and Translation with Commentary* (New York: 2024). Unfortunately this book appeared too late for us to make use of it in our volume.

9 El-Rouayheb, *The Development*, 44.

were to exist, then it would be B. This decisive intervention is only one of the numerous moves by al-Rāzī we'll be charting in the book. In this sense, our second volume confirms his status as the greatest all-around thinker of the age (the third volume will offer further confirmation still.)

Al-Rāzī's importance notwithstanding, logic displays a rather different development than what we found with metaphysics. In the introduction to the first volume, we proposed subdividing our period into three stages: formation, culmination, and refinement. The "culmination" comes with al-Rāzī (d. 1210) and al-Suhrawardī (d. 1191) towards the end of the 12th century, with an honorable mention for the somewhat earlier Abū l-Barakāt al-Baghdādī (d. ca. 1165). Though we did find much of interest in 13th century metaphysics, that period emerged as one in which the positions staked out by 12th century figures were explored, critiqued, and modified, rather than as a period of further paradigm shifts. That broad picture remains accurate for some of the topics covered in this book too, especially in the chapters on epistemology; chapter 14 provides a good example.

But when it comes to logic, most of the action is in the 13th century. This is above all thanks to of al-Khūnajī (d. 1248), but we also have other significant contributors like al-Urmawī (d. 1283), Naṣīr al-Dīn al-Ṭūsī (d. 1274), and al-Kātibī (d. 1276). So our selection of material agrees with the later tradition—which produced many commentaries and super-commentaries on the works of these figures—in giving a special status to these 13th century thinkers. For the details of their innovations, the reader is referred to the individual chapters in what follows. But if one had to say briefly in what the breakthrough consisted, one might simply reiterate that they began to delve deeply into logic as a subject worthy of consideration in its own right. To take just one telling example, al-Khūnajī was fascinated by arguments with premises that have impossible subjects, like "round square is a figure." This is not a topic that would attract the attention of someone who believed that the whole point of logic is to do science. Rather, al-Khūnajī wants to chart all possible valid argument forms, and does not particularly mind whether they are forms one would use outside of a purely logical discussion.

Our different thematic interest means that we will also be quoting from the works of a few authors who were not yet introduced at the beginning of the previous volume. Apart from the sundry grammarians and jurists referred to in chapters 3 and 4, we should mention here Ibn al-Ṣalāḥ and Ibn Wāṣil al-Ḥamawī, who have not yet appeared on the scene. About Ibn al-Ṣalāḥ we know very little, and most of his works remain unexplored. He was likely born in Hamadān and trained in medicine, serving as the court physician for the Artuqid ruler of Mardin, Ilghazī (r. 1107–1122). He died in Damascus in 1154. He

is perhaps best known for his astronomical work on Ptolemy's *Almagest*, but he also wrote on mathematical and philosophical problems. In this volume he appears as the first scholar in the Arabic tradition to defend the fourth figure of the syllogism. As for Ibn Wāṣil, he was a student of al-Khūnajī, but like al-Urmawī and al-Kātibī was an independent-minded logician. Born in 1208, he studied the rational sciences in Damascus with Fakhr al-Dīn al-Rāzī's student Shams al-Dīn al-Khusrawshāhī, and later settled in Cairo. The Mamlūk ruler Baybars sent him on a mission to Sicily at the court of Manfred, son of Frederick II. He died in his hometown Hamah in 1298. Other than his commentary on al-Khūnajī's *Jumal*, which has recently been edited by El-Rouayheb in 2022, Ibn Wāṣil's work on logic remains largely unknown.

With these exceptions, the cast of characters is the same, and so is the method we have used. The material presented here was selected from the vast corpus of philosophical literature in the 12–13th centuries by postdoctoral researchers on the Heirs of Avicenna project, in this case Fedor Benevich and Dustin Klinger. They did draft translations and worked on these with Peter Adamson, who also did the initial drafts of the thematic introductions for each chapter. We were fortunate enough to get further contributions from three more outstanding scholars, who did the selection and translation of passages for further chapters: these were Nora Kalbarczyk (chapters 3 and 4), Alexander Kalbarczyk (chapter 5), and Hassan Rezakhany (chapter 17). As with the previous volume, all the texts quoted are being made available in the original languages as a free online resource, which can be found at:

www.heirsofavicenna.net

CHAPTER 1

Conception and Assent

Our decision to combine logic and epistemology in a single sourcebook is well-justified by the historical material. As seen in other chapters, questions about knowledge were often raised in the context of logic, going right back to Aristotle's *Posterior Analytics*. And certain philosophical notions were central to both logic and epistemology. There is no better example than the pair conception (literally "forming or imaging": *taṣawwur*) and assent (literally "deeming true": *taṣdīq*). On the one hand, these are fundamental for logic. Indeed, the very need for logic was often explained while discussing conception and assent, and as we'll see in the next chapter, conception and assent were sometimes identified as the very subject matter of logic. While that was a controversial claim, it was widely understood that logic should study how conceptions and assents may be combined. This brings us to epistemology, because knowledge is standardly defined as consisting of conceptions and assents, and their effective combination yields further knowledge.

A first pass at explaining the difference between conception and assent might be that conception is an understanding of the meaning of a single term, like "human," "animal," "whiteness," "king," "intellect," "thing," or "existence." Assent by contrast has to do with whole propositions, like "human is animal," "every whiteness is an accident," "the whole is greater than the part," "the universe is contingent," or "God is eternal"; these examples are drawn from [T3, T10, T26, T30]. This would explain why Avicenna says that assents, but not conceptions, involve truth and falsehood: single terms cannot have a truth value, but propositions can [T3]. But actually, things are not quite this simple, because Avicenna also says in the same passage that one can have a "conception" of a whole proposition, when one understands its meaning but is in doubt as to whether or not it is true. An extensive discussion of this issue is provided by Abū al-Barakāt al-Baghdādī, who says that individual conceptions can be combined to form complex ones, without any judgment being made [T11]. (This point could help to explain the sense in which we might be able to conceptualize impossible things [T9].) As a result, even though "conception" does usually mean an understanding of a single term, a better way to draw the contrast would be to say that conception does not involve a judgment as to truth, whereas assent does. (Note that the Arabic word for "judgment," *ḥukm*, can also have the narrower meaning of "predicating" a term of a subject.) As we'll see, though, there was a debate over how exactly judgment enters into the definition of assent.

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Avicenna did not invent the terminology of conception and assent. There is a passage in Aristotle that may have given rise to the distinction [T1]. In Arabic philosophy, it can be traced back at least to al-Fārābī, who already uses the standard vocabulary [T2].[1] As al-Fārābī notes, both conception and assent can vary in strength or completeness. Avicenna provides a systematic account of this gradation [T3, T4]. On the side of conception, one might understand something only by means of its accidental features, or with full adequacy. These would correspond to having a mere "description (*rasm*)" or a full "definition (*ḥadd*)" of the thing in question [T4].[2] As for assent, already al-Fārābī says that "complete assent" is the same as certainty.[3] For Avicenna full certainty requires second-order certainty that a first-order assent is true, and indeed could not be false. If the second-order belief is lacking or the first-order belief is true but could be false, these are weaker forms of assent. Weaker still is mere supposition or persuasion, since these assents are tentative. A somewhat more elaborate presentation of these options is found at the end of our period in al-Ḥillī [T33].

As al-Ḥillī says, following Avicenna [T6], for each kind of conception and assent there is a corresponding form of ignorance. Thus one may not know a definition, not know whether a proposition is true, actually assent to it falsely, etc. One may also suffer from "compound ignorance," which is the lack of a certain type of second-order knowledge, as when one does not realize that a first-order belief is false [T23]. (A further puzzle arises here: something unknown is known after all, since one may know that it is unknown. This paradox is discussed by Fakhr al-Dīn al-Rāzī and al-Abharī [T12, T14]; for further texts on the problem, see our chapter on Paradoxes later in this volume.) Now, since there are different kinds of ignorance, there need to be different methods for gaining

1 The historical background is explained by J. Lameer, *Conception and Belief in Ṣadr al-Dīn Shirāzī* (*ca. 1571–1635*) (Tehran: 2006). For other general studies see H.A. Wolfson, "*Taṣawwur* and *Taṣdīq* in Arabic Philosophy," *Moslem World* 33 (1943), 114–128; M. Maroth, "*Taṣawwur* and *Taṣdīq*," in S. Knuuttila, S. Ebbesen, and R. Työrinoja (eds), *Knowledge and the Sciences in Medieval Philosophy: Proceedings of the Eighth International Congress of Medieval Philosophy* (Helsinki: 1990), vol. 2, 265–274.

2 A good example of this philosophical machinery in action can be found at the beginning of Avicenna's treatment of soul in the relevant section of *al-Shifā'*: Aristotle's account of soul as "form of the potentially living body" does give us a conception of soul, but is a mere description since the relation to the body is accidental to soul.

3 A fuller discussion of the foundational role of the distinction between conception and assent for Avicenna's theory of science is found in R. Strobino, *Avicenna's Theory of Science: Logic, Metaphysics, Epistemology* (Oakland: 2021), 13–40. See further D.L. Black, "Knowledge (*'ilm*) and Certitude (*yaqīn*) in al-Fārābī's Epistemology," *Arabic Sciences and Philosophy* 16 (2006), 11–46.

knowledge. Most broadly, knowledge in the form of a conception is attained by an "explanatory phrase," meaning either a nominal description or a definition, while knowledge in the form of assent is attained through arguments of various kinds [T5, T8]. In general, we need to have conceptions before we can have assents, because to assent (or "judge") that P holds of S requires having a conception of S and P, even if the conception may be imperfect.

Though we have just spoken of "gaining" or "attaining" knowledge, not all knowledge is in fact acquired through an inferential process. Instead, we have conceptions and assents that are "innate (*fiṭrī*)," "necessary (*ḍarūrī*)," or "evident (*badīhī*)". This means, as al-Sāwī puts it [T8], that one need merely "bring something to mind" and one will immediate know it. In other cases, one will need to perform some sort of investigation: standard terms for this are *naẓar*, *baḥth*, and *ṭalab*, and the knowledge that is thereby gleaned is called "inferential (*naẓarī*)." The process of inquiry is an example of discursive "thinking (*fikr*)" [T10, T13, T16, T21, T29, T31], as contrasted to "intuition (*ḥads*)" or other direct forms of apprehension like sensation.[4] It's widely agreed, and argued explicitly in several texts, that there must be both self-evident and acquired knowledge. The reason that some knowledge must be self-evident is that otherwise, all knowledge would have to be acquired on the basis of prior knowledge, leading to a regress [T8, T12, T13]. Conversely, the reason that some knowledge must be acquired is that otherwise, we would know everything without any need for inquiry [T7, T15, T25].[5] For detailed reflections on the cogency of these points, see [T21, T24, T28].

This is used to establish the need for logic. It provides the rules for moving from what is already known to what is unknown. In the first instance, the starting points consist of necessary knowledge, which is the kind of knowledge that stops a regress of inquiry. We can then combine items of necessary knowledge, in accordance with logical rules, to generate inferential knowledge without falling into error [T12, T13, T16, T18, T25, T29, T31]. Here our authors worry that logic itself is something we can know, or not know. So it seems that circularity or regress looms: if knowledge of logic is achieved in accordance with its own rules, this would be circular, but if it is achieved by some other rules, there must be a "further logic" that studies those rules, and so on [T13, T16]. To this we may respond that logic itself is made up of both evident and inferential knowledge, and the evident part is enough to get us to the rest of logic [T12, T13, T18, T29, T31]. It is also admitted that for some gifted people, logic may actually not

4 For the contrast between *fikr* and *ḥads* see our chapter on Intuition in the volume on Physics and Psychology.

5 Cf. our chapter in this volume on Criticism of Definitions and Meno's Paradox.

be needed, since they can unerringly acquire new knowledge without needing to follow rules [T12, T16, T25]. But this would be an exceptional case, usually limited to prophets, so it does not show that there is no need for logic in general.

We said above that assents presuppose conceptions, since we need a conception of the singular terms involved in an assent before we can perform that assent. As we saw, Abū al-Barakāt stresses in [T11] that one could understand a conceptual complex without assenting to it, as when one merely entertains a proposition. It looks like what is added to get to "assent" is simply a "judgment" about the proposition, as when one judges that one term does indeed hold of another. In the case of an affirmative judgment ("S is P") one is assenting that the proposition "corresponds" to the way the world really is; in a negative judgment, that the proposition does *not* so correspond ("not: S is P") [T3]. This leads Fakhr al-Dīn to a mereological analysis of assent: it is made up of three parts, namely the conception of the subject, the conception of the predicate, and the affirmative or negative judgment about their relationship [T12]. Al-Ṭūsī complains that this analysis is idiosyncratic. The "philosophers" held that the assent is just the judgment, not the judgment *plus* the conceptions of the terms involved [T17]. So for them, the conceptions of the terms would be only a "condition" for the assent, whereas for al-Rāzī they are "parts" of the assent.

This disparity catches the attention of al-Kātibī [T19, T20, T22] and al-Samarqandī [T27]. The point is not a merely terminological one, because the position of the "philosophers" highlights the psychological attitude of the person making the assent. This is especially clear in [T19], where al-Kātibī says that Avicenna sometimes restricts "assent" only to cases where a person actually believes that a proposition is true. But even without this clarification, it seems that the "philosophers" are identifying assent with the *act* of judgment. This is very different from al-Rāzī's account, at least as al-Kātibī understands it. This account seems to make "assent" equivalent to the assertoric proposition, given that the terms of the proposition are for him "part" of the assent; here the "judgment" seems to be simply the function of the copula linking the terms (for more on this see our chapter below on the Proposition). Thus al-Kātibī complains that for real assent one would need to add, in addition to the terms and their relation, a fourth element, namely "the *occurrence* of the judgment linking the two conceptions of the terms." Samarqandī offers a further reason to prefer the account of the "philosophers," namely that we qualify assents as "evident," "acquired," "certain," and the like, and these features seem to apply more to the judgment of an individual inquirer than to the assertoric proposition made up of two terms and a copula [T27]. Indeed one and the same proposition might be "certain" for one person and "uncertain" for another.

From the foregoing it should be clear that conception and assent are absolutely fundamental for the figures in our period. Later thinkers, like Quṭb al-Dīn al-Rāzī and Mullā Ṣadrā, even wrote dedicated treatises to the topic.[6] While our authors did not write such treatises, their further reflections in both logic and epistemology were always informed by the distinction, to the extent that the rest of this volume can fairly be described as an exploration of topics that have to do with conception, assent, or both.

Texts from: Aristotle, al-Fārābī, Avicenna, Bahmanyār, al-Sāwī, al-Suhrawardī, Abū al-Barakāt, al-Rāzī, al-Khūnajī, al-Abharī, al-Ṭūsī, al-Kātibī, Ibn Kammūna, al-Urmawī, al-Samarqandī, al-Bayḍāwī, al-Ḥillī.

[T1] Aristotle, *Posterior Analytics A*, 71ª11–17 [trans. Barnes]

[*two ways of knowing*]

There are two ways in which we must already have knowledge: of some things we must already believe that they are, of others we must grasp what the items spoken about are (and of some things both). E.g. of the fact that everything is either asserted or denied truly, we must believe that it is the case; of the triangle, that it means this; and of the unit both (both what it means and that it is). For these items are not all equally plain to us.

[T2] Al-Fārābī, *Burhān*, 19.7–20.5

[*knowledge consists of either conception* (taṣawwur) *or assent* (taṣdīq)]

Knowledge (*maʿārif*) is of two types: conception (*taṣawwur*) and assent (*taṣdīq*). Each of these may be either complete or deficient. Above, we have specified that by which we reach each of these types [of knowledge], without qualification. Given that there are things by means of which knowledge arises for us (complete [knowledge], that is, not those by means of which deficient [knowledge] arises), and given that there are rules by which these [things] are explained in unqualified terms, without [yet] being sufficient to establish what

6 See again Lameer, *Conception and Belief*, and Quṭb al-Dīn al-Rāzī, *al-Risāla al-maʿmūla fī al-taṣawwur wa-l-taṣdīq*, in M. Sharīʿatī (ed.), *Risālatān fī al-taṣawwur wa-l-taṣdīq* (Beirut: 2004). On this text see further Ö. Türker, "Qutb al-Din al-Razi on the Notion of Assent and Its Philosophical Implications," *Nazariyat* 5/2 (2019), 1–23 and more generally D. Klinger, "'All knowledge is either conception or assent'. On the history and significance of a fundamental distinction in Islamic philosophy," *British Journal for the History of Philosophy* 32 (2024), 1–21.

is specific to complete [knowledge] and what is specific to deficient [knowledge], our opinion will be set out on the basis of what was explained earlier, about what is specific to complete and incomplete knowledge. We will build on these two [ideas] to explain what we specify as complete knowledge.

[***complete assent is certainty***]

[20] Complete assent is the same as certainty (*huwa al-yaqīn*), while complete conception is conceptualizing something in a way that encapsulates the thing's essence in the way we specified. Namely that the thing be conceptualized in terms of what is signified by its definition (*ḥadd*). Now, we can build on these two [ideas] to explain what precisely we mean by complete assent. We say that assent in general is when a human believes that something is the case and accordingly judges that the existence of that thing outside the mind is in accord with what is believed in the mind. Truth, then, is when the thing outside the mind in fact is in accord with what is believed in the mind.

[T3] Avicenna, *Shifāʾ, Manṭiq, Madkhal*, 30.10–32.5 [trans. Di Vincenzo mod.][7]

[***conception with and without assent as forms of knowledge***]

A thing may be known in two ways. *The first* is only to conceptualize it, so that, provided that it has a name by which it is expressed, its meaning is represented in the mind, even if there is neither truth nor falsehood. As when one says "human," or "do this," since when you understand the meaning of [the expression] addressed to you, you have conceptualized it. *The second* is when, along with conception, there is assent, so that when you are told for instance, "every whiteness is an accident," not only do you attain from this the conception of the meaning of this statement, but you also assent to the fact that it is so.

[***doubt is conception without assent***]

Now, when you doubt whether it is so or not, you have conceptualized what is said, for you cannot be in doubt about what you neither conceptualize nor understand; but you have not yet assented to it. Every assent comes with a con-

7 There now is a new edition of Avicenna's *Madkhal* that in many ways improves on the Cairo edition: Avicenna, *The Healing, Logic, Isagoge: a New Edition, English Translation and Commentary of the Kitāb al-Madḫal of Avicenna's Kitāb al-Šifāʾ*. Ed. by S. Di Vincenzo. Berlin: 2021. Di Vincenzo's edition has the pagination of the Cairo edition in the margins (17.7–18.2 for this passage) and we henceforth only refer to the new edition.

ception, but not vice-versa. The conception [32] of such a meaning helps you to produce in the mind the form of this composition, and of that from which it is composed, like "whiteness" and "accident." Assent consists in realizing in the mind the relation of this form to the things themselves, with regard to the fact that the form corresponds to them. Denial is the opposite.

[*going from lack of knowledge to knowledge*]

Similarly, a thing may be unknown in two ways. *First*, with respect to conception, and *second*, with respect to assent. Both of them are realized as known only by acquisition, and the acquisition of each one of them [is attained] by means of something previously known and by means of some feature (*hay'a*) and attribute (*ṣifa*) that belong to that known thing, by virtue of which the mind may make a transition from knowing them to knowing what was [previously] unknown.

[T4] Avicenna, *Shifā', Manṭiq, Burhān*, 51.6–52.20 [trans. Strobino, mod.]

[*a doubly fourfold distinction of conception and assent*]

The knowledge (*'ilm*) that is acquired through thought, and the one that is attained without an acquisition that involves thought, are each subdivided into assent and conception. We attain the [knowledge] that is acquired through thought on the basis of assent by a syllogism (*qiyās*), while we attain the [knowledge] that is acquired on the basis of conception by a definition (*ḥadd*).

[*the ranks of assent*]

Assent is arranged, as it were, in ranks. (a) One kind of assent is certain (*yaqīn*) and along with it a second belief is held (either in actuality or in a potentiality close to being actual) that that to which one assents cannot be otherwise, and this belief about it cannot cease. (b) Another kind of assent resembles the one that is certain (*shabīh bi-l-yaqīn*). This is an assent relative to which only a single [first-order] belief is held. (b1) On the one hand, the second[-order] belief just mentioned [sc. that the first-order belief must be true] may not be held along with the first (whether in actuality or in a potentiality close to being actual). In fact, if one were to be reminded of it, the firmness (*istiḥkām*) of the first assent would be eliminated. (b2) Or on the other hand, one may believe that [the first-order belief] could cease [to be true in principle], but it is a settled matter (*mutaqarrir*), and along with it one does not actually believe that the contradictory [of the first belief] is possible. (c) Besides these, [the types of assent] also include the persuasive or suppositional (*iqnā'ī ẓannī*). This kind is

such that the first[-order] belief is held, and along with it there is a second[-order] belief (either in actuality or in a potentiality which is close to being actual) that the contradictory [of the first-order belief] is indeed possible. If this second[-order] belief is not held, it is because it is not present to the mind, in which case it is really only a supposition.

[***the corresponding four ranks of syllogisms***]

For all these reasons, syllogisms too are arranged in ranks. Thus, one kind of syllogism, namely the demonstrative syllogism, brings about certainty. Another kind, namely the dialectical syllogism or the kind of sophistical syllogism [52] employed in fallacious reasoning, brings about what resembles certainty. A further kind, namely the rhetorical syllogism, brings about persuasion or predominant supposition. Poetic [syllogism] does not bring about assent, but rather imagination (*takhayyul*), which moves the soul to sadness and joy through the imitation of noble and ignoble matters.

[***the four ranks of conception***]

Acquired conception too is arranged in ranks. (a) One kind is the conception of something by means of accidental features which in aggregate are proper solely to [that thing], or instead [features] that are shared in common by it and other things. (b) Another kind is the conception of something by means of essential features, in a way that is proper solely to it, or in a way shared in common by it and other things. The conception involving essential features that are proper solely to the thing may either (b1) include the perfection of the true reality of the thing's existence (*kamāl ḥaqīqat wujūdihī*), resulting in an intelligible form equivalent to the thing's existent form, so long as none of its essential features are left out; or (b2) it may include (*yatanāwala*) some portion of the true reality, but not its perfection.

[***the corresponding four ranks of conceptual descriptions***]

Similarly, the discrimination (*tamyīz*) by means of a differentiating expression (*qawl mufaṣṣil*) used to discriminate and convey (*taʿrīf*) something may be, with respect to what is being determined, (a) a discrimination of it from some [things] but not from others. In which case, (a1) if it is by means of accidental features, then it is an incomplete description (*rasm*), whereas (a2) if it is by means of essential features, it is an incomplete definition (*ḥadd*). (b) In other cases, it may be a discrimination of [something] from everything else. In which case, (b1) if it is by means of accidental features, it is a complete description, especially if the genus in it is proximate (*qarīb*); whereas (b2) if it is by means of essential features, then, for the superficial logicians (*ʿinda l-ẓāhiriyyīn*

min al-manṭiqiyyīn), it is a complete definition, but for those who validate and determine (*muḥaṣṣilīn*), if it includes *all* of the essential notions in such a way that nothing is left out, then it is a complete definition; but if something is left out, it is not a complete definition.

[T5] Avicenna, *Manṭiq al-Mashriqiyyīn*, 9.4–10.14

[***the role of conception and assent in demonstration***]

We now want to explain how we proceed from things already attained in our minds and imagination to other things not yet attained in them, by seeking to attain them through those first things. The things attained in our minds and imagination must somehow be represented and conceptualized. And we then conceptualize them either as a conception that is not accompanied by assent, or as a conception that is so accompanied. Conceptions that are not accompanied by assent are, for example: the meaning of "human," or "rational mortal animal," or "is he walking?" The conceptions that are accompanied by assent are, for example: "four is even." For we take it to be true, and surely it is necessary to believe in its truth. So "four is even" is such that, as soon as [it is encountered], its meaning is conceptualized; once we have attained its conception, so is the assent to it. Still, the conception is prior, for if we do not first conceptualize a certain meaning, we cannot come to assent to it. And we may come to a conception without having an assent connected to it.

All that we have related so far leads us to the point that the meanings we conceptualize may in some cases lead to assent, but in some cases to other directions not relevant to the sciences. This being so, the things by which we proceed to make [those meanings] present in our minds, imaginations, intellects, or souls (the terminology makes no difference here), either allow us to attain a conception alone, or our assent to their necessity. As we now want to explain how we seek to attain this in our souls, we must explain how we acquire a conception and how we acquire an assent.

[***the methods by which we acquire conception and assent: phrase and argument***]

There is no doubt that the method by which we attain conception is connected to a clarification of the method [10] by which we attain assent. Customarily, people call that by which we attain a conception by the name of "explanatory phrase," or simply "phrase." [Explanatory phrases] include what they call "defin-

ition" and "description." And it is their custom to call that by which one attains assent an "argument." [Arguments] include those they call "syllogism," "induction," etc.

Since conception is prior to assent, the discussion conveying (*taʿlīm*) "explanatory phrase" should come before the discussion that conveys "argument." And one should speak of each separately, not mixing one with the other. Whatever does not characterize the one that is more appropriately taken to be prior might still apply to the one that is more appropriately taken to be posterior. Whoever does that [i.e. mixes the two] produces a combination that is egregiously confused, because every explanatory phrase and every argument is composed of meanings and expressions. And every combination of things truly reaches completion only by including that from which it ought to be composed, in such a way that whatever is needed for the essence is combined. This is just how we need to go about seeking definitions and arguments, for example: first, include the things of which they are combined, not just in any which way, but in such a way that [only] those things are taken from which definition or argument is rightly composed. This is the procedure we will indicate.

[T6] Avicenna, *Ishārāt, Manṭiq*, 40.13–41.10 [trans. Inati, mod.]

[***conception and assent in knowing and not knowing***]

The unknown corresponds to the known. A thing may be *known* as an unvarnished conception, like our knowledge [41] of the meaning of the word "triangle"; or as a conception accompanied by assent, like our knowledge that the angles of every triangle are equal to two right angles. Likewise, a thing may be *unknown* by way of conception, so that its meaning is not conceived until one learns such [other] concepts, as "binomial," "disconnected," and others; or it may be unknown by way of assent, until one learns [another assent], such as that the square on the diagonal is equal to the squares of the sides of the right angle which it subtends.

Thus, our path of inquiry concerning the sciences and related studies is directed toward attaining either a conception or an assent. It is customary to call the thing by means of which the sought conception is attained an "explanatory phrase (*qawl shāriḥ*)," which includes definition, description, and what resembles them; and to call the thing by means of which the sought assent is attained "argument (*ḥujja*)," which includes syllogism, induction, and the like.

[T7] Bahmanyār, *Taḥṣīl*, 4.4–5.6

[***conception and assent; our fallibility with respect to them***]

All knowledge (*ʿilm*) is either conception or assent. Conception is primary knowledge and is acquired by definitions and what plays a similar role, for example descriptions. For instance, our conception of the quiddity of "human." Assent is acquired by syllogisms and what plays a similar role, like analogy and induction. For instance, our assent to [the proposition] that the universe has a beginning.[8] Definition and syllogism are two tools by means of which things that are unknown become known by reflection (*rawiyya*). In both cases, some are true, while others aren't but are nonetheless useful, and still others are false but resemble the true ones. For the most part, innate human disposition (*al-fiṭra al-insāniyya*) is insufficient to tell these [three] types apart. Otherwise, no disagreement would ever arise among scholars, nor would there ever be a contradiction within someone's own views.

[***the form and matter of conceptions and assents***]

Every definition and syllogism is devised and composed from understood meanings (*maʿanin maʿqūla*), and arranged in a definite way. Each has matter and form from which it is composed. Just as it is not appropriate for a house or chair to be composed from just any matter, nor can any chance form completely turn the matter of a house into a house, or that of a chair into a chair—rather for everything [5] there is a specific matter to which a specific, given form belongs—so it is with all objects of knowledge that are acquired by reflection. They have a specific matter and a specific, given form, each of them making it what it truly is. And just as failure in creating a house may occur from the side of the matter, though the form is perfect, or from the side of the form, though the matter is perfect, or again from both sides, so it is with the failure that may befall a definition or a syllogism: it may come from the side of its form, or its matter, or from both sides.

[T8] Al-Sāwī, *Baṣāʾir*, 26.19–27.7

[***every assent requires at least two conceptions***]

Every assent must be preceded by at least two conceptions, and sometimes more, as in "two is half of four." There are three conceptions in this [statement]:

8 Or "has a principle," the Arabic is *mabdaʾ*.

the conceptions of "two," "four," and "half." But it is not necessary that there be more than two conceptions. Conceptions, by contrast, need no preceding assent, which is why they are called "primary knowledge" (*al-ʿilm al-awwal*).

[***the method for reaching new knowledge***]

To perceive some of these unknown things it may be enough to mention them, or bring them to mind. When it is brought to mind one is reminded of it, but it is still unknown since although it is present in the mind, one does not yet actually know it, except potentially. But in most cases recalling is not enough. Rather, [in most cases] one perceives [unknown things] only with the help of other items of knowledge [acquired] previously, and with a specific arrangement of them for the sake of coming to knowledge of this unknown thing.

Every unknown thing has objects of knowledge corresponding to it. For an unknown conception there will be things known by conception, and for an unknown assent there will be things known by assent. These objects of knowledge are either acquired by innate disposition (*fiṭra*) without any preceding items of knowledge required for their acquisition, or they are attained by means of other items of knowledge that have been attained previously. There looms no [27] regress here; rather, all items of knowledge ultimately go back to items of knowledge that have been attained by the innate disposition. The logician is obliged to inquire into these items of knowledge and how they are put together in a compound, so that they lead to the still unknown things that are being sought.

[***explanatory phrases lead to conception, and arguments to assent***]

It is customary to call the compound of items of knowledge in a special configuration leading to conception an "explanatory phrase": this includes both definition and description. The compound of items of knowledge in a special configuration leading to assent is called an "argument": this includes syllogism and induction, among others. Error can occur in both cases, I mean in the explanatory phrase and the argument, sometimes with respect to the items of knowledge of which they are composed, sometimes with respect to their composition, and sometimes with respect to both.

[T9] Al-Sāwī, *Baṣāʾir,* 232.12–19

[***the problem of conceptualizing impossible things***]

A doubt arises here: how is a non-existent which cannot possibly exist (*al-maʿdūm al-muḥāl al-wujūd*) to be conceptualized, so that one may thereafter

come to know its non-existence? For a conception is the inscribing of a form in the mind in correspondence to existence, so if something has no form in existence, how can an image (*mithāl*) of its form arise in the mind?

Solution: the impossible [is of two kinds]. On the one hand, it may be non-existent without having a composition in it or any detailed account (*tafṣīl*). Then its conception arises through comparison to what does exist, like void, or a contrary (*ḍidd*) to God. For void is conceptualized as being like a receptacle for bodies, while the contrary to God is understood as standing to God as cold does to heat. Thus one may conceptualize something [impossible] by means of something possible that is analogous to it. But it cannot be conceptualized or grasped intellectually in its essence (*fī dhātihi*), since it has no essence. On the other hand, [the impossible] may have composition in it and a detailed account, like the phoenix or a man who flies. In this case it is conceptualized first by means of its details, which are not impossible, and then these details are put together.

[T10] al-Suhrawardī, *Manṭiq Al-Talwīḥāt*, 1.10–16[9]

[***conception and assent***]

You should know that knowledge consists either in (a) conception, which is the occurring of the form of a thing in the intellect, or (b) assent, which is judgment regarding forms, either by negation or by affirmation. Assent always involves two or more forms.

Both are divided into innate (*fiṭrī*) and non-innate. (a1) For the former [i.e. conception] the first [sc. the innate] is like conception of the notion (*mafhūm*) of a thing, or of existence, while (a2) the second [sc. the non-innate], is like the conception of the intellect or of "property." The two divisions of assent are like (b1) your judgment that the whole is greater than the part, and (b2) that the world exists contingently. What is not innate makes use of thought (*fikr*), by which we mean here a person's agreeing to a transition from his presently available knowledge (*min ʿilmihi al-ḥāsil*) to the knowledge that is to be made available.

9 The logic part of the *Talwīḥāt* has been edited separately by ʿAlī Akbar al-Fayyāḍ; references in this volume will be to al-Fayyāḍ's edition.

[T11] Abū al-Barakāt, *Muʿtabar*, 34.14–37.1

[***conceptions as mental images of objects***]

For objects existing in concrete reality, images (*ṣuwar*) are established in our minds, as if they were likenesses and phantoms. People retain them in their minds, while the actual objects cannot be retained. Expressions primarily signify the likenesses, and through these as an intermediary, they signify the concretely existing objects. For example the word "horse" [represents the mental image of horse], and the word "human" [represents the mental image of a human], like the names Zayd and ʿUmar: when their names are mentioned, a meaning is represented in the person's mind, as if one were witnessing something even as the existing thing is not present to be observed. When the concrete thing, of which there is a representation and image, is present, one may say "this is that" [i.e. the thing matches the mental image]. Otherwise, someone who sees a person at a certain point, who then leaves, would have no way to know upon witnessing them again that this is the same person. There is no difference between the first and second sighting. And [without recognition] there would be no way for someone who saw a person or several people to see another, different person and recognize them as human. Recognition (*maʿrifa*) comes only from his finding the initial acquaintance (*maʿrifa*) and image settled in his mind from before, and matching it with the person seen on a second occasion. The image that [35] was formed in the mind initially, based on perception, represents that image in the minds on the basis of observation. This is called a "conception." With respect to what words signify, it is called "comprehension (*fahm*)," and when it is matched to the representations that arise out of perceptions, it is called "recognition (*maʿrifa*)."

[***conception is prior to understanding***]

Conception must precede recognition and comprehension. So if someone is addressed with a word whose meaning they have not conceptualized in their mind, they will not comprehend what is being communicated to them, and the sound of the word will not refer them to [its meaning]. It is only if they have previously formed a conception of that meaning, and the linguistic reference is then aligned with the word, that they can comprehend what is being communicated. If for instance someone sees a person, Zayd, and is then told that his name is Zayd, then when someone says "Zayd" to him, he comprehends what is being communicated. Similarly, if someone sees something without having previously conceptualized its meaning, it cannot be said that he recognizes it. But if he has previously formed a conception of its meaning and then perceives it again, matching his perception of it with his previous conception,

it can then be said that he recognizes it. The phrases "understanding what is comprehended by conception (*al-maʿrifa bi-mafhūm al-taṣawwur*)" and "conception of what is comprehended by understanding" are not distinguished [in meaning], though it would be more fitting to distinguish them.

[***complex conceptions are composed from simple ones***]

All of this is based on what is indicated by individual terms, namely single meanings. Although individual terms, insofar as they are individual and single, like "Zayd," "ʿAmr," "Khālid," "human," and "animal," belong to something individual, they can also belong to something composite, but this is with regard to (*min jiha*) the individual [items] from which this thing is composed. What I mean is that conception, understanding, and comprehension can belong to compositions of meanings indicated by compositions of words. For example, when we say "human is animal" and "Zayd is animal," but this is with regard to "human," "animal," and "Zayd,"[10] which are the individual items of the composition—not with regard to the composition [itself]. The mind can make compositions and combinations out of individual conceptions, and the individual [combinations] are what composite expressions refer to, for instance what is comprehended from saying "human is animal." Here a nexus (*nisba*) occurs between the constituent elements, and it is like a connector or bond between them. This mental activity is called "judgment (*ḥukm*)" and "conviction (*jazm*)." This composition of meanings aims to correspond to the composition between existents, and the correspondence of this to existence and to things in themselves is truth and correctness, as our saying "human is animal" corresponds [with how things are]. When they disagree [with how things are] this is falsehood and untruth, as if we said "human is stone," or "is horse." [36] [By contrast], the correspondence or disagreement with individuals' conceptualizations is not considered to be truth or falsehood. It is not true or false when someone says "human" or "animal" on their own.

[***acquaintance of individual elements is prior to knowledge of compositions***]

When a composition is determined in the mind, along with what is true in it, this is called "knowledge (*ʿilm*)." For "acquaintance (*maʿrifa*)" has to do with the individual elements, while knowledge has to do with the compositions. Each composition consists of individual elements, out of which it is composed. So in every case of knowledge, there is [also] acquaintance, which is conception of individual elements. Yet because not all individual elements enter into

10 Deleting the redundant *wa-l-insān*.

composition, but may just be noticed as individuals without composition, the reverse is not the case: there is not knowledge in every case of acquaintance. So acquaintance is prior to knowledge and more general, since whenever there is knowledge, there is acquaintance, but it is not the case that whenever there is acquaintance, there is knowledge.

[***judgment of composition is assent***]

Judging a composition to be in correspondence with what exists, and with the actual facts (*al-amr fī nafsihi*), is assent. Disagreement with this is denial. And one may say that truth means assent, but it is [also] allowed that "judgment," which requires that truth and falsehood belong to it, means assent and denial. Such is the furthest verification [on this topic].

[***connecting conceptions with and without assent***]

How though does it happen that when someone hears it said that "human is animal" or "is not animal," and understands what has been said, he forms a concept in his mind of the expression "human" and of the expression "animal," such that there is in the mind a nexus and bond between the two, and at that moment, he neither affirms nor denies, and what is determined in his mind does not represent assent or denial? Yet it may [in other cases] happen that assertion or denial do enter into his mind. A full investigation of this is not suitable here.

[***more on acquaintance and knowledge***]

Now, one may speak of "acquaintance" of particular things and their meanings, such as the meaning of "Zayd," "'Amr," "Khālid," "this star," or "this horse." But one may speak of "knowledge" when it comes to universal meanings, such as the meaning of "human," "animal," and the like. Let us use these terms and understand them as we have determined. (If someone else uses and understands them differently, they are entitled to do so: scholarly dispute is not about the use of words.) And cases of acquaintance and knowledge may differ in respect of deficiency and completeness, weakness and accuracy. They vary in terms of more and less, within certain limits.

Let us then mention what applies to conceptions and cases of acquaintance, and postpone what specifically pertains to cases of knowledge, because acquaintance precedes knowledge, and it is necessary to provide an in-depth discussion of all types of acquaintance before moving on [37] to an in-depth discussion of the different types of knowledge.

[T12] Al-Rāzī, *Manṭiq al-Mulakhkhaṣ*, 7.5–9.11

[***assent is conceptions plus affirmation or denial***]

When a conception is judged by a negation or an affirmation, then the combination is an assent. The difference between [a conception and an assent] is just like the difference between simple and compound. Every assent must have in it three conceptions in order for there to be primary knowledge: the truth of the judgment, that [subject] about which one judges (*ʿalayhi*), and that [predicate] which is judged to hold of it (*bi-hi*). When one of them is not conceptualized, judgment is impossible.

[***paradox that the unknown is known to be unknown***]

[8] *Let it not be said*: can't you judge concerning what is unknown that no judgment can be made about it, and claim that this proposition is correct, in which case the subject of the judgment is not conceptualized?[11] *It might be argued* [*in response*]: it is known that the unknown is unknown. So the subject of the judgment is not [entirely] unknown. *But we reply* [*instead*]: the unknown can be considered from two perspectives. First, as something which accidentally happens not to be known. Second, just from this perspective, namely that it is "the unknown." If the subject in the above proposition is [unknown] in the first sense, then just insofar as one is making a judgment about it, it is not conceptualized, and so the objection is dealt with. If on the other hand it is [unknown] in the second sense, then the judgment that no judgment can be made about it is false. Because whatever is known can be the object of a judgment, even if only that it is known. After all, we say that raising doubts about necessary things does nothing to undermine them.[12]

[***is all knowledge acquired?***]

Furthermore, we say: either (a) each single conception and assent has no need to be acquired, but this is plainly wrong. Or (b) each one does in fact need [to be acquired]. But this is absurd. For each of them must be connected to another, either through a finite number of steps or an infinity of them. But the latter would be absurd. So, assuming this to be correct, the sought conclusion is attained. For, either among [the conceptions and assents] there is

11 For a more elaborate discussion of this problem in al-Rāzī see T9 in our chapter on Paradoxes.

12 In other words, the intrinsic status of a thing is independent of the status of our epistemic access to it.

something that just by itself necessitates something else in the mind, in which case whatever follows from it is not acquired; or this is not the case, which would entail that it does not necessitate anything else from among [the conceptions and assents], so none of them is acquired. Or (c) it may be that some [conceptions and assents] need to be acquired, while others do not. In which case there are two options. (c1) On the one hand, that it is impossible to produce a sought result from what does need [acquisition] to what does not need [acquisition]. But this is false, because some things we know necessarily, namely that whoever knows that Y follows from X,[13] while also knowing that X exists or that Y does not exist, will know in the first case [9] that Y exists and in the second case that X does not exist. (c2) Or on the other hand, that this is possible. In which case either (c2a) every sought result comes about from just any evident [conception or assent], whatever it may be, but this is a capital falsehood. Or, (c2b) for every sought result there are specific first principles whose occurrence must satisfy specific conditions. In that case, these conditions must be explained, so that whoever knows them is capable of seeking to know [previously] unknown things without erring, except rarely. The science responsible for this is logic.

[***an argument against the need for logic***]

Let it not be said: if this logic is made up of first principles, then we don't need to study it; and if it isn't, then there must be a need for some other logic. Besides, many people who haven't studied this discipline (*'ilm*) have in fact acquired knowledge of [previously] unknown things.

For we reply, *first*, that many intellectual inquiries in this discipline are matters such that, when they are considered in isolation, their truth is known evidently. And those that aren't will inevitably be reducible to such [evident cases]. *And second*, that we don't say that the mind on its own is [always] insufficient to hit upon the truth. Rather, in unusual cases it suffices for certain things, but [otherwise] it may not be sufficient, and then it needs the help of logic.

13 We here introduce variables to make the point clear; the text says literally "that a thing follows from a thing" and then speaks of what follows and that from which it follows, which would make for a very wordy translation. The point is simply to allude to modus ponens (the first case) and modus tollens (the second case).

[T13] Al-Khūnajī, *Kashf al-Asrār*, 6.3–8.12

[***conceptions and assents are either necessary or inferential, forming the basis of all thought***]

Knowledge is either conception, when it is plain perception; or assent, when along with the judgment of one thing being related to another there is affirmation or denial. Each may be (a) inferential (*naẓarī*), needing thought (*fikr*) if it is to occur; [thought] is putting known things into a specific arrangement that leads to the attainment of something previously unknown. Or it may be (b) necessary, with no need for this [sc. thought] in order to occur. Conceptions and assents are not all necessary, otherwise we would never fail to find anything. Nor are they all inferential, otherwise we would never arrive at anything. Hence, some of them are necessary while some of them are inferential. But they all have a limit at the necessary ones, on pain of circularity and regress.

[***human perfection through conception and assent***]

Now, the perfection of the human soul in its theoretical capacity is [realized] only when knowledge is attained through inference as everything is connected to necessary [conception and assent]. Likewise with [the soul's] capacity for practical action, because the fulfillment of [this capacity] is doing good, forming favorable character traits, and avoiding the blameworthy things of this world by both reason and Law. All this is [achieved] through ethics and practical wisdom, which are both among the sorts of knowledge that involve inference.

[***logic is needed in striving for human perfection***]

Inferential knowledge is attained only through thought. Thinking is not something that ever hits on items that are contrary to one another as a consequence of thinking; rather one and the same person [thinks about the contraries] at two different times. So there is a need for rules that provide understanding of how inferential [knowledge] may be acquired from necessary [knowledge], and of the discernment of true [7] and false among [conceptions and assents]; through [these rules] one is also able to distinguish one from the other, and what gives rise to mistakes or makes one suppose one has made a mistake. Only then is one safe from error in thinking, by complying with [these rules]. This is logic.

[***objection: how are the rules of logic achieved without a further logic?***]

If it is said: this science [of logic] is not necessary in respect of all its parts, otherwise it would be impossible to err in thinking, because all the principles

would be necessary; and the science [of logic], in respect of all its methods for moving from [necessary principles] to matters of inference, is in that case also necessary. Therefore [logic itself] involves inference, either in all its parts or only in some. So acquisition [not evident knowledge] must be needed for the rules you mentioned. *And let it not be said*: some items of knowledge have a regular arrangement, and so are unaffected by error, like in arithmetic and calculation. For these, one does not need logic. Others are not like this, like in natural philosophy and metaphysics. For these, one does need logic. It does not follow from this that logic needs something [else], because it is regular in procedure. For the aspects of it that involve inference are reducible to those aspects of it that are necessary, so there is no need for other rules. *For we reply to the first point* that error may indeed occur in logic; one cannot dispute this. *And to the second point*, that that in it which involves inference, even if it is acquired from necessary [premises] that belong to this science, cannot be acquired without the risk of error, so that rules are required as a guide towards the correct acquisition. So the same question returns, because those people who attain items of knowledge by inference, and hit upon them in their thinking without complying with the mentioned rules deny the need for [logic].

[***some rules are primitive, others are deduced***]

Response to the first: not all methods of acquisition are necessary, as you said, nor are they all a matter of inference. Otherwise every such method by which one thing is attained on the basis of another would need a further method. Hence some are necessary, for instance the perfect syllogism, while others are [established] by inference, for instance the imperfect syllogism. Those that are [established] by inference are acquired on the basis of those that are necessary, and they are acquired from them by means of a method [8] that is necessary as well, just as the imperfect syllogism is acquired from the perfect syllogism, and is so acquired by means of a syllogism that is also itself perfect.

[***universal applicability of logic***]

Let it not be said: if the necessary method suffices for [knowledge-]acquisition in logic, then it suffices for [knowledge-]acquisition in the other sciences as well. Otherwise, the same question will return. *For we say*: including all methods that protect the mind from error provides the science of right and wrong thinking, however it may be arranged. We claim no more than this for the need of logic.

[***most people need the rules of logic for correct thinking***]

Thereby the second question is solved as well, because hitting on [the truth] sometimes involves a thought process according to the necessary, sequential arrangement which is known to everyone. Sometimes though [hitting on the truth] just occurs (*kānat muṭlaqan*). Indeed there are some people who receive the support of God and the special privilege of being helped with the acquisition [of knowledge]. Such people are, to those who pursue inquiry by the methods of logic, like the bedouins are to the specialists of Arabic grammar, or as the natural poet is to the poet who sticks to the rules of prosody. But the fact that such a person does not need the rules we have mentioned does not mean that no one else needs them. And the fact that the other people mentioned do not need rules of grammar or prosody does not mean that no one else needs them.

[T14] Al-Abharī, *Khulāṣat al-Afkār*, 97.4–99.18

[***conception and assent as forms of knowledge***]

You should know that knowledge is the occurrence of a thing's form in the intellect (*al-ʿilm huwa ḥuṣūl ṣūrat al-shayʾ fī-l-ʿaql*).[14] This may be either a mere conception, like the conception of the meaning of a triangle as such; or it may be a conception together with an assent, like when we conceptualize the meaning of "A triangle is a shape" and then accept this as true. In this case conception is for the composition of the two terms to occur in the intellect, along with the occurrence of the two [terms]; the assent is the occurring in the intellect of a nexus (*nisba*) of this form to the [extramental] things, as corresponding to them.

[***commentary on [T12]: whether judgments can be made about the unknown***]

The Imām [*al-Rāzī*] *said:* "when a conception is judged by a negation or an affirmation, then the combination is an assent." But then conception would be part of the quiddity of assent, which is a departure from the way these terms are customarily used.

14 For further texts from al-Abharī defining Knowledge and Perception see our chapter on Knowledge in the present volume.

[98] *Then he said:* "every assent must have in it three conceptions … the truth of what is judged to hold of it, that of which it holds, and the judgment [itself]. For when [one of them] is unknown, then it is impossible that there be a judgment about what holds of it, or about that of which it holds."[15]

We say: we do not concede that no judgment can be made concerning the unknown, for when we conceptualize something true about the unknown, then the judgment does hold of it truly. For example, "The mover of bodies exists" [is true] even when we don't know the true nature of [the mover]. But even if we were to concede that no judgment can be made concerning the unknown, why would it follow from this that what is judged to hold of it must be known? Maybe he meant to say that if "No judgment can be made concerning whatever is unknown" is true, then everything about which one *can* make a judgement is known; and one can indeed make a judgment about that which is judged to hold of [the subject, i.e. the predicate]; therefore what is judged to hold of [the subject] is known. *But we say*: we do not concede that from this, there would follow the truth of "Everything about which one can make a judgment is known." It would follow only if the universal affirmative converted by contraposition to a universal affirmative. But this is not the case.

Then [*al-Rāzī*] *asked himself*: if it is true that "one cannot make a judgment about the unknown," and what is judged to hold of [the subject] in this proposition is unknown, does this imply a contradiction? He replies that the unknown is known to be unknown. This is a pointer to the fact that every assent requires the conception of a true thing about which judgment is made, because one cannot make a judgment about the absolutely unknown. But in this case, it is [at least] known of the object of judgment that it is unknown. Hence no contradiction is implied.

[99] Then he comes back to the objection, [pointing out] that the unknown can be considered in two ways. Either as something of which being unknown is an accident; or not with this first consideration, and [just] as the unknown. If then it's true that "the unknown cannot be judged," and "the judged" in this proposition is taken in the first sense, then a contradiction does follow. But if

15 The wording of the text here is rather different than in [T12]. The latter phrase simply means that what is not conceptualized can be neither the predicate nor subject of a proposition.

it is taken in the second sense, then the judgment that it cannot be judged is simply false, because everything that is known can be judged.

But this is a feeble argument. For if we say "the unknown cannot be judged," then "the judged" is that which has the accident of being unknown. And if this is the case, and it is in fact true that "the *absolute* unknown cannot be judged," then a contradiction would follow. But the answer to this is not to concede that this implies a contradiction. It would do so only if the object of judgment were *absolutely* unknown, but this is not so. For it is known not to be absolutely unknown.

You should know: what [al-Rāzī] mentioned requires that the sought conclusion [is already] accepted [so his argument is circular]. *For we say*: suppose we concede that the absolutely unknown cannot be judged. But why would that imply that the object of judgment must be known in some respect (*iʿtibār*)? And then the same difficulty recurs.

But there is another strategy here, which is to say: if it is true that "Whatever is judged is known in some respect," then "Whatever is absolutely unknown is not judged" is false. For if it were true, then if what is judged in this proposition is absolutely unknown, then a contradiction will follow. If it is known in *some* respect, and everything that is known in some respect can be judged, it follows that the proposition is both true and false. But we deny the truth of the conditional.

[T15] Al-Abharī, *Khulāṣat al-Afkār*, 100.17–101.7

[***dividing conception and assent into evident and acquired***]

Each conception or assent is either evident (*badīhī*), like the conception of "existence" and "thingness," or the assent to "Every whole is greater than its part"; or it is acquired (*kasbī*), like the conception of "substance" and "accident," or the assent to "God is One" and "The world has a Creator."

[***criticism of al-Rāzī's argument that no conception is acquired***]

[101] *The Imam* [*al-Rāzī*] *said*: no conception is acquired, because a conception is either grasped intuitively (*mashhūr bi-hi*) or not. Whatever is grasped intuitively cannot be sought, because this would be attaining something that is already attained (*taḥṣīlan li-ḥāsil*). But whatever is *not* grasped intuitively cannot be sought, because the soul is incapable of it.

We say: We don't concede that whatever is grasped intuitively cannot be sought. For it is possible that what is sought is not grasped intuitively, as only one of its accidents is grasped intuitively. Then the soul could come to seek it.[16]

[T16] al-Abharī, *Khulāṣat al-Afkār*, 103.2–104.6

[***acquired and evident conceptions, and the need for logic***]

As it has been established that every single conception and assent is either evident or acquired, and the acquired ones are only achieved through thinking (*fikr*)—by which I mean the arrangement of things [already] known, in such a way that one is led by means of them to making the unknown known—they must therefore rest on the evident ones, either in one step or several. Otherwise circularity or an infinite regress would follow, implying that it is impossible to acquire them.

Now, thinking can either get it right or be in error. Otherwise there would be no difference between different minds. Hence there must be a science that distinguishes between getting it right and being in error, and this is called "logic." It is described as an instrument made up of rules, such that when they are followed the mind is protected from error in thinking.

[***a doubt concerning the need to teach logic***]

Let it not be said: all of logic is either acquired, or all of it is evident, or some of it is evident and some of it is acquired. The first is absurd, for otherwise another set of rules would be needed and that would lead to an infinite regress. So we're down to the other two options. But either way, there will be no need to teach logic. For if all of logic is evident, then it is obvious. But if some of it is evident and some of it acquired, then either the evident parts of it are sufficient to acquire the unknown parts, or they are not. The second is false, for otherwise the acquired parts would need an external set of rules, and an absurdity would follow. So it is established that [the evident parts] are sufficient. But there is no need to teach the evident part because it is already attained. Nor is there any need to teach the acquired part, because the evident part by itself is enough to lead to the unknowns.

16 For more on this puzzle see our chapter on Definitions and Meno's Paradox in the present volume.

For we say: we don't claim an absolute need for teaching logic. Rather, we claim that the thinking that leads to the acquisition of unknowns sometimes depends on a method that is itself evident, and sometimes on a method that is acquired, but proceeds from what is evident. Someone who employs the second method might well fall into error in thinking, and so must have a set of rules discerning between falling into error and getting it right.

[104] *Let it not be said*: if this discernment is the task of logic, then the thoughts of someone who has not studied logic are incorrect. But the consequent is false, for many people have correct thoughts without the science of logic.

For we say: we do not concede the truth of the implication. Its truth would follow only if someone's thoughts came evidently. *Or, we say*: its truth follows only if someone is not helped by God with an exceptionally strong intellect that can discern between falling into error and getting it right.

[T17] Al-Ṭūsī, *Talkhīṣ al-Muḥaṣṣal*, 6.4–12

[***on al-Rāzī's definitions of conception and assent in terms of perception***]

[*Al-Rāzī*]: when we perceive a true reality, we consider it either as such, and without passing judgment as denial or assertion, in which case it is conception; or we make a judgment about it as a denial or assertion, in which case it is assent.

I say: the author [al-Rāzī] differs from the other philosophers with regard to assent. For he holds that it is perception together with judgment, just as conception is perception without judgment. Whereas [other philosophers] hold that assent is just the judgment alone, and that the conception is not part of the concept of "assent," in the sense that it would be a part of the whole. So [for them] conception is mere perception. Just as [the other philosophers] divide meanings into perception itself and what attaches to it, so they divide what attaches to [perception] into that which can be made to bear truth and falsehood, and that which cannot be made like this, and these are like forms that attach to it, whether in things, in intelligence (*nuhan*), in the understanding, in desire, and so on. And the first two options, they call knowledge.

[T18] Al-Kātibī, *Shamsiyya*, 204.6–16 [trans. Street, mod.]

[***conception, assent, and the need for logic***]

Knowledge is either mere conception, which is the occurrence of the form of something in the intellect, or conception together with judgment, which is tying one thing to another affirmatively or negatively; and the combination [of conception and judgment] is assent.

Neither of the two divisions of knowledge is evident; (otherwise there would be nothing we do not know), nor entirely a matter of inference (otherwise knowledge claims would form a vicious circle or regress). Rather, part of each division of knowledge is evident, and part a matter of inference that is attained through thinking, which is the ordering of known things such that they lead to knowledge of the unknown. But this ordering is not always correct, given that some thinkers contradict others about what their thoughts imply; and indeed, one and the same person may contradict himself at different times. Thus, there is a need for rules that supply awareness of the ways of acquiring inferential knowledge from necessary [knowledge], and which also lead to the comprehension of sound and unsound thinking, which arises concerning [inferential knowledge]. This is logic. Its description is that it is a rule-like instrument which, if implemented, preserves the mind from error in thought. Logic is neither entirely evident (otherwise we could dispense with learning it), nor is it entirely inferential (otherwise its claims would form a vicious circle or regress). Rather, part of it is evident, while part is inferential but is derived from [the evident].

[T19] Al-Kātibī, *Munaṣṣaṣ*, fol. $2^{r}23$–$2^{v}12$

[***commentary on T12***]

[Al-Rāzī]: when a conception is judged by a negation or an affirmation, then the combination is an assent.

I say: the meaning of this is that we have a conception, or that there is in existence [such a thing as] conception, "conception" meaning a thing's form occurring in our soul. "Assent" means, according to him, a judgment (which is the tying of one thing to another by affirmation or negation) together with the conception of what the judgement is about, and what is judged to hold of it. For his words "when it is judged by a negation or an affirmation, then the combination is an assent" clearly signify this.

He says: the difference between the two is like the difference between simple and composite.

That is, the difference between conception and assent is the same as the difference between simple and composite.

There are several points to be made here. *First*, that the simple is prior to the composite in terms of existence and non-existence, whether extramental or mental. *Second*, that [the simple] is not an attribute of the composite, unless I mean by "attribute" something extrinsic to the composite; otherwise, this is not correct. *Third*, the that the [simple] is not more obscure (*akhfī*) than the [composite].

For the older logicians, assent is only the judgment. These two ways of understanding "assent," I mean: the meaning of assent according to the Imām [al-Rāzī], and its meaning according to the opinion of the older logicians, are necessarily coextensive in terms of their generality. [2^{v}] The truth of one of them implies the truth of the other, because a judgment cannot [be made] without a conception of what the judgment is about, and what is being judged to hold of it. But the understanding [of "assent" on the two approaches] does differ, because "assent" for the philosophers [i.e. the older logicians] is [only] a *part* of "assent" for the Imām [al-Rāzī]. This is because for him, the true reality of assent includes both that which the judgment is about and that which is judged to hold of it, whereas for [the philosophers] it is an external condition for it.

According to the Master [sc. Avicenna], [assent] means judgment together with the belief (*iʿtiqād*) that it is true, in other words, [the belief] that what is in the mind corresponds to what is in reality. For example: when you say that one is half of two, you deem this judgment of yours to be true, in the sense that the fact of the matter (*al-amr fī nafsihi*) is indeed like this. Now, this is more specific than the previous two accounts [of assent], because it does not include any judgment not believed to be true, while on the first two accounts it would be included. (The technical terms are not in dispute.) However, the Master [sc. Avicenna] does not [always] comply with this interpretation in his use of "assent," but [sometimes] employs the expression "assent" for an assent that is not believed to be true. So this is something you should know.

[***the number of conceptions necessary for assent***]

[*Al-Rāzī*] *said:* every assent contains three conceptions.

I say: his point is not that assent just means the same thing as three conceptions, namely the conception of that which the judgment is about, of that which is judged to hold of it, and of the judgment itself. For if this is all that "assent" means, then the quiddity of assent would necessarily be realized whenever these three conceptions are present; but this is not the case. Rather there must be, alongside these three conceptions, another fourth one, namely the occurrence of the judgment linking the two conceptions of the terms [in a proposition]. From this it does not follow, however, that the conceptions which are part of the true nature of an assent are more than these three, because the conception of the occurrence of the judgment linking the two conceptions of the terms is here a condition external to the true nature of assent. What is part of the true nature of assent, though, alongside the three conceptions, is the mere occurrence (but not the conception) of the judgment that there is a link between the two [terms].

[T20] Al-Kātibī, *Sharḥ Kashf al-Asrār*, fol. 1^{v}31–2^{v}4

[***commentary on T13: criticism of al-Khūnajī's definition of conception and assent***]

He said: knowledge is either (*immā*) conception, when it is plain perception; or (*immā*) assent, when along with the judgment of one thing being related to another there is affirmation or denial.

I say: this statement is clear, but it has both linguistic and conceptual flaws.

[***linguistic objection***]

The linguistic flaw is: he means that if knowledge is considered to be plain perception, then "it is *either* conception"; "*or* assent," if it includes judgment. There is an evident flaw in this expression, in that it presents the term *immā* ("either") for both options, without mentioning an alternative. This is not acceptable according to the Arabic grammarians.

[***conceptual objections***]

As for the conceptual flaw, [2^{r}] it has several aspects. *First*: if what is meant by "assent" is the same as the judgment which is the link (*isnād*) understood by the interlocutor [sc. the relation or "nexus" between subject and predicate, signified by the copula], meaning that he could stop there and receive the truth or falsehood—as is the opinion of the philosophers (*ḥukamāʾ*)—then it does not fall under the category of knowledge. For it would be incorrect to say:

"knowledge is *either* a conception *or* a judgment," as on this assumption, knowledge will not be limited to these two options, for it could also be a conception together with a judgment regarding [that conception]. If it is the combination of the conception of the subject of the judgment, its predicate, and the judgment [itself]—as held by the Imām [al-Rāzī]—then knowledge is not confined to conception and assent only. For there is also the possibility that it is a conception together with another conception, or a conception together with a judgment linked to [the conception] itself.

Second: conception is either a part of assent, or a condition for it, according to the two different opinions [of al-Rāzī and the philosophers]. Either way[17] is it ruled out that an exclusive disjunction is realized between the two [sc. between conception and assent], as no exclusive disjunction can be realized between part and whole, and condition and conditioned.

Third: if conception comes down to what he mentioned, namely simple perception (which is explained as perception not accompanied by judgment), then the absence of judgment would be included in the true reality of conception. This would then be a part of assent, according to the opinion of the Imām [al-Rāzī], or a condition for it, according to the opinion of the philosophers. But the part of a part is a part, and the part of a condition is a condition, so in the opinion of the Imām [al-Rāzī] assent would depend on something contradictory to it, while in the opinion of the philosophers, [assent] would have something contradictory as a condition [that is, because assent involves judgment, but its part or condition would exclude judgment]. Both claims are absurd.

[***reply to the linguistic objection***]

In response to the first, linguistic flaw, we say in reply that what is meant is that knowledge is *either* conception *or* assent because if it is simple perception, it is a conception, whereas if it is perception accompanied by judgment, it is assent. The consequence of these two conditionals is that it is impossible for there to be a perception that *neither* has judgment *nor* lacks judgment. Therefore, one of the two consequences must ensue—that knowledge is conception, *or* that knowledge is assent—which is what was to be shown.

17 Reading *kayfa kāna* with Shahīn's unpublished edition.

[***replies to the conceptual objections***]

Regarding the conceptual flaws, *in response to the first point, we say*: why did you say that if assent means the same as judgment, it does not fall under knowledge? We do not accept your statement "it would be incorrect to say: 'knowledge is either a conception or a judgment.'" What indicates the validity of this statement is that we have an exclusive disjunction: knowledge is either simple perception or perception with judgment, not both, and not neither. Knowledge of this is necessary. Perception with judgment implies that there is a judgment, since the whole implies the part. Therefore, knowledge is *either* simple perception *or* judgment, in the sense of an exclusive disjunction, given that if one thing cannot help following from another, then the latter cannot help implying the former. Simple perception is conception, so that our statement—that knowledge is either conception or judgment, not both and not neither—comes out true. And this is just what was claimed. *Regarding the statement*: "on this assumption, knowledge will not be limited to these two options, for it may also be a conception together with a judgment regarding [that conception]," *we say*: this means it will not be true of knowledge that it is [just] one of the two things mentioned [i.e. conception or assent], but it will [also] be true of knowledge that it [may be] this combination [sc. conception plus judgment]. We do not deny this statement; in fact we advocate and accept it. However, you have not said [anything to show] that, if "assent" means the combination of the conception of what the judgment is about, what is judged to hold of it, and the judgment itself, then knowledge would not be limited to conception and assent. *Regarding the statement* "there is also the possibility that it is a conception alongside another conception, or a conception together with a judgment related to [the conception] itself," *we say*: what was mentioned means that knowledge is either one conception, or more than one, or a conception together with a link, whether this link be of something to itself, or to something else. Since this is what he means, knowledge is necessarily limited to conception and assent in the opinion of the Imām.

On this basis you may know the answer to the second point: nothing rules out that a disjunction may be realized between part and whole, or condition and conditioned, where of course at least one must be true, but it is not ruled out that both are true. If we were to concede that the mentioned distinction[18] rules out that all [disjuncts] are satisfied, then [the following problem would arise]: the one is part of the many, and a disjunction would be realized that prevents [the disjuncts, i.e. one and many] from being satisfied together, meaning that

18 Reading *infiṣāl*.

it can [only] be true that something is either one or many [but not both]. But since this [sc. non-exclusive disjunction] is generally possible, why wouldn't it be possible here as well, with the same meaning? Indeed this possibility is obvious, because one and the same item of knowledge cannot simultaneously be both conception and assent.

Response to the third point: we do not concede that, if conception comes down to [2^{v}] what he mentioned, then the absence of judgment is included within its true reality. Instead, this would be necessary only if simple perception were perception specified by the absence of judgment. But this is not so. Simple perception is just perception as such, without considering anything else alongside it, whether this be that which the judgment is about, or anything else. Nothing prevents us from considering conception, on this interpretation, as a part or condition of assent.

[T21] Al-Kātibī, *Sharḥ Kashf al-asrār*, fol. 2^{v}9–3^{r}18

[***further commentary on T13: criticism of al-Khūnajī's division of knowledge into inferential and necessary***]

He said: each may be inferential, needing thought if it is to occur; [thought] is putting known things into a specific arrangement that leads to the attainment of something previously unknown. Or it may be necessary, with no need for this [sc. thought] in order to be attained.

I say: this alludes to the explanation of the senses in which conception and assent may be inferential or necessary, so that each of the two is subdivided into two. He explains inferential [knowledge] as that which requires thinking to attain it, while necessary [knowledge] is that which requires no thinking for its attainment.

[***necessary assents might require thinking***]

But this calls for further inquiry. For a necessary assent may require thinking to attain it, yet the "necessary" is [supposedly] that which does not require this for its attainment. For he explained assent, which is the conception of its two extremes, regardless of whether or not it requires thought, as being sufficient for the mind to grasp the relation (*nisba*) between the two [terms], whether by affirmation or negation. In that case assent, which is the conception of both extremes, arises only by means of thinking, so it does require thinking for its attainment. Therefore his statement "or it may be necessary, with no need for

thought in order to be attained" is incorrect. Admittedly, what he mentioned does work as an explanation of inferential and necessary *conceptions*, but not of inferential and necessary *assents*. Rather, the explanation of necessary assent is what we have mentioned. As for inferential [assent], it is that for which the conception of the two extremes is not sufficient for the mind to lay down a nexus between the two [terms]; rather, it depends on something further.

What he said about the definition of thought has to do [both] with the thinking that leads to the attainment of something as yet unknown by means of a conception, and the thinking that leads to the attainment of something as yet unknown by means of assent. For the class of "the known" is more general than that of "known conceptions" or "known assents."

He lays down as a condition that there be a "specific arrangement," simply because not just any arrangement will lead to the attainment of what is as yet unknown. The arrangement leading to this must be executed in a specific way, which includes the conditions of definitions and [nominal] descriptions, if it is to lead to the attainment of a *conception* that is as yet unknown, or if it is to lead to the attainment of an as yet unknown *assent*, then it should include the conditions of syllogistic productivity. He takes for granted that during inquiry, one is being led to something that is as yet unknown, because of the impossibility of attaining what is already attained.

The mentioned definition is in terms of the four causes. For the "known things" are the material cause; the "arrangement" is the formal cause; the "attainment" on the basis of these of what is as yet unknown is the final cause; and the efficient cause, even if is not mentioned explicitly, is indicated by "arrangement." For it is inconceivable that here be an arrangement without an arranger.

[***knowledge cannot be entirely inferential or entirely necessary***]

He said: conceptions and assents [3^{r}] are not all necessary, otherwise we would never fail to find anything. Nor are they all inferential, otherwise we would never arrive at anything. Hence, some of them are necessary while some of them are inferential. But they all have a limit at the necessary ones, on pain of circularity and regress.

I say: the purpose of this is to establish that some instances of conception and assent are necessary, while others are inferential. He argues for it by saying that, if this were not the case, either (a) all of them would be necessary, or (b) all of them would be inferential, but both options are impossible. The conditional

inference is clear in itself, as there are only these three options, so if any one is eliminated, one of the remaining two must be the case.

(a) And the first option must be rejected, because if all [conceptions and assents] were evident, it would follow that no conceptions and assents would ever be unknown to us in the first place—this would mean that we would attain each conception without needing to go through any explanatory speech, and would attain each assent without needing to go through any argument. The author [sc. al-Khūnajī] is indicating this by saying, "otherwise we would never fail to find anything," a consequent that is necessarily false. After all we do, in order to attain conceptions like those of "mind" or "soul," for example, need the help of explanatory phrases; while for some assents, like knowing the unity of the Maker of the world or the createdness of the world, for example, we need the help of syllogistic argumentation.

(b) The second option must be rejected too, because if all of them were acquired, then it would follow that we would never acquire any conceptions and assents at all. It's obvious that the necessary ones could not be attained. As for the impossibility of attaining acquired [conceptions and assents], this is because the attainment of any object of inquiry, whether conception or assent, would be through another one, and that other one, being also acquired, would require another, and this would require yet another one, and so on. This leads either to circularity, if each one requires what is prior to it; or to infinite regress, if each one needs something else to which it is prior. Either way, it would follow that it is impossible to attain [the object of inquiry].

[T22] Al-Kātibī, *Mufaṣṣal*, 52.2–53.7

[*the contrast between al-Rāzī and the philosophers on conception and assent*]

[*Al-Rāzī*]: when we perceive a true reality, we either consider it as such, and without passing a judgment about it, either by affirmation or denial, in which case it is a conception; or we do make a judgement about it, either by affirmation or denial, and in this case it is an assent. [...]

[52.11] [*Al-Kātibī*]: if knowledge is the perception of the quiddity of something just as such, then it is pure conception. They explained it in terms of the form of a thing being present in the intellect. And according to the Imām [al-Rāzī], if [knowledge] is the perception of [the quiddity] along with a judgment about

it, then it is an assent. On the view of the philosophers (*ḥukama'*), by contrast, "assent" is only said of the judgment alone, that is, of the link made between one thing and another as affirmation or negation; a conception is the predicate or the subject of the judgment. Thus, according to the Imām, [conception] is part of the true reality of assent, whereas according to [the philosophers], it is an external condition.

[***primary conception and assent***]

[53] Each of the two [i.e. conception and assent] may be primary. Among conceptions, [primary] are those that arise in the intellect without being acquired or sought. Among assents, [primary] are those such that the conception of the two terms (even if they are acquired) suffice for the intellect to determine the relation of the predicate to the subject. "Primary assent" may be explained as assent that is preceded by no prior assent. And those [conceptions and assents] that are not primary are those that are opposite to the primary ones.

[T23] Al-Kātibī and Ibn Kammūna, *As'ilat*, 13.15–15.10

[***is there a disjunction between conception and assent? cf.*** [*T20*] ***above***]

The Imām [*al-Rāzī*] *said*: knowledge is either conception or assent.

We [*al-Kātibī*] *say*: this calls for further inquiry. For the word "either (*immā*)" is supposed to indicate an opposition. Now, conception is either part of assent, as the Imām holds, or a condition for it, as the philosophers (*al-ḥukamā'*) hold. But how should this be if there is no opposition between the two [sc. conception and assent], given that it is impossible for something to be opposed to its part or its condition?

The response is to say: we don't concede that there can be no opposition between the two. For if a disjunction is exclusive, that means [14] that it is impossible for both [disjuncts] to be true of a single item of knowledge, in the sense that a single item of knowledge is both conception and assent at the same time. But if [a disjunction] is inclusive, this means that it is impossible that *neither* [disjunct] be true. Either way, there can be opposition between a thing and its part: for one is part of many, yet they cannot be true of a single object at the same time, and each thing has to be one or the other.

[***assent and conviction***]

[*Al-Rāzī*] *said:* assent is either accompanied by conviction (*jazm*), or not, etc.

We [*al-Kātibī*] *say*: this calls for further inquiry. For knowledge is divided first of all into conception and assent. If assent were then divided into convinced and unconvinced, then given that the types of conviction include ignorance, as he has mentioned, it would follow that knowledge has ignorance among its divisions! For the lower division falls under the higher one, and whatever is divided into two things must be true of both. So it follows that knowledge is true of ignorance, which is absurd.

The response is to say: we do not concede that the lower division applies to the higher. This would only be the case if the higher were more general than the lower, without qualification. But if it is more general only in certain respects, this is not the case. For instance, "animal" is in some sense more general than "white," while "white" may be divided into animate and inanimate; "animal" may not be divided into inanimate and itself [sc. animal, which is the name for everything animate]. So here, knowledge and assent are not general and specific without qualification, but only in certain respects. Hence it does not follow that knowledge is divided into the same things into which assent is divided. [...]

[15.5] [*Ibn Kammūna's response*]: *I say* that the question is ill-conceived, and the right way to solve it is as follows. It is not impossible that "knowledge," in the sense that it is divided into conception and assent, is true of composite ignorance [i.e. not knowing that one does not know]. For what is meant by this is not "knowledge" in the sense that it is opposed to ignorance. This is what they explained as belief that something is such-and-such, together with the belief that it cannot be otherwise, so that it could not be different, even if one looked at it differently (*wa-bi-wāsiṭa tawjīh*). But [our case] is more general than this: its meaning is independent of the awareness of the thing, or representing its form in the mind, regardless whether this awareness or representation corresponds to extramental reality or not. So [the argument] is a fallacy that exploits the ambiguity of the term "knowledge" between two different meanings.

[T24] Al-Kātibī and Ibn Kammūna, *As'ilat*, 16.11–18.14

[***on whether the denial of self-evident knowledge leads to a vicious regress***]

He [*al-Rāzī*] *said*: It must be acknowledged that there exist self-evident (*badīhiyya*) conceptions and evident assents ...

We [*al-Kātibī*] *say*: we do not concede that the regress is absurd; the proof mentioned for its absurdity will be discussed later. *The response is to say*: we don't need the mentioned proof for the viciousness of the regress here. *Rather, we say*: if all knowledge, whether conception or assent, depended on some other knowledge of the same kind, and this went on infinitely, it would follow that knowledge can arise in the intellect only after infinite items of knowledge arise in the intellect. If this were so, then no knowledge could ever arise in the mind, because it is impossible for the mind to contain an infinity. This [consequence] is necessarily false, though, because we necessarily find in our souls an awareness (*wijdān*) that things do arise in our intellects.

[***grasping what knowledge is in general, as opposed to given items of knowledge***]

He [*al-Rāzī*] *said*: we choose to say that knowledge does not need a definition …

We [*al-Kātibī*] *say*: we do not concede that if there is no necessary knowledge of the true reality of knowledge, then it is impossible for knowledge of the true reality of *this specific* item of knowledge to be necessary. This would follow only if, from knowing the totality of all items of knowledge just as such, it necessarily followed [17] that there would necessarily be knowledge of every part of [that totality]. But this is impossible, because it may be that knowledge of the last part of the totality is evident, whereas knowledge of all other parts is acquired. For the knowledge that the Necessary Existent has no position and no place is necessary knowledge, even though knowledge of His true reality, and the true reality of position and place, as well as [God's] being free of need [for both], arises only through nuanced inquiry. […]

[***back to the regress issue***]

[17.11] *I* [*Ibn Kammūna*] *say*: the opponent would have to say, "we do not concede that the mind cannot contain an infinity." For if his proof rests on the denial of the regress, then he cannot do without [proving its absurdity], as he mentioned. But if it can be shown in some other way, then it is up to him to say how and inquire into it. And if he claims that there is necessary [knowledge] to rule it out, still he must give a demonstration. Furthermore, most scholars claim that God the exalted, and the heavenly intellects and souls, do contain knowledge of infinite things, like future events and so forth, yet if this were necessarily false for them, then what would they say in evidence [against it]?

[***back to the question of knowledge in general and specific items of knowledge***]

[18] *Concerning the proof that knowledge needs no definition he* [*al-Kātibī*] *said*: we do not concede that if there is no necessary knowledge of the true reality of knowledge …

I [*Ibn Kammūna*] *say*: the claim is that, when knowledge is necessary in the sense that it arises for someone who has pursued no inferential knowledge (regardless whether that knowledge is a conception or an assent), then if each part of [knowledge] must be conceptualized, and is in no need of a definition, yet the specific items of knowledge to which the author of the book points here, like knowledge that fire burns, or that the sun rises, etc., and like our knowledge that we exist, that our souls exist, or that our pains and sufferings exist—if someone conceptualizes each of these, without having pursued any inferential knowledge at all, then there can be no doubt that assent to them depends on the conceptualization of their parts. If these conceptions were acquired, then these evident assents would not arise for someone who has not pursued knowledge, like common people or children. But the consequent is false, therefore so is the antecedent. And the argument of the quarrelsome Imām [al-Kātibī], while true in itself, does nothing to undermine the argument of the author of the book [al-Rāzī].

He [*al-Kātibī*] *said*: for the knowledge that the Necessary Existent has no position and no place is necessary knowledge … *and so on until the end of the objection*.

This calls for further inquiry. For his claim that the necessity [of the knowledge of God's not being in position or place] is subsequent to knowledge of His true reality, and [knowledge that] the true reality of place and position are impossible [for Him]. Not one of the verifiers says this! Rather, the knowledge must come after all the conceptions, those that are evident and those that are acquired, by setting up a demonstration for this, just as everyone who writes on this subject does.

[T25] Al-Urmawī, *Maṭāliʿ*, 3.8–4.6[19]

[***necessary and inferential conceptions and assents***]

Knowledge is either conception, if it is simple perception, or assent, if it is accompanied by a negative or affirmative judgment. Not all of them are necessary, such that we do not need inquiry (*naẓar*) to attain them. ([Inquiry] is arranging those things that have already arisen, so as by means of them to reach something that has not yet arisen.) Otherwise [sc. if all knowledge were necessary], we would not need to attain them and no inquiry would be needed to do so: in fact we could not "attain" [knowledge at all]. Rather, some [knowledge] is inferential (*naẓarī*), and can be acquired from necessary [knowledge] by means of definite methods and specified conditions, whose existence or correctness are not known by necessity.

[***the need for logic***]

This is why often error creeps into thinking, so that there is a need for rules that provide understanding of the methods by which one can move from known things to previously unknown things, as well as the conditions under which error hardly ever occurs in thought. And this is logic. [4] *If it is said*: because logic is inferential, error occurs in it, and it needs a further set of rules, which leads to an infinite regress; besides, many people acquire items of knowledge and understanding without logic. *Then we say*: part of logic is necessary and part of it is inferential. The latter is acquired on the basis of the necessary [part of logic] through a method that is itself necessary. For example, those of the four syllogistic forms that are not obvious are acquired from those that are, by means of a method that itself is obvious, as you will learn. So there is no need for a further logic. And the fact that for some exceptionally capable people, it is possible to acquire [knowledge] without logic, is no argument that there is no need for it [for everyone else].

[T26] Al-Urmawī, *Bayān al-ḥaqq*, fol. 1^{v}13–16

[***examples of conception and assent***]

Knowledge, whether it is conception or assent, may be necessary and need nothing else for its acquisition; or it may be inferential, and need something

19 Since the first volume went to print, we became aware of an edition of the *Maṭāliʿ* that was prepared by Hasan Akkanat as a doctoral dissertation to the University of Ankara in 2006. Further references will be to this edition.

else. Conception is the perception of something without considering whether it as the subject or predicate of an affirmative or negative judgment. Whereas that which is regarded with a view to precisely this, is an assent. For example, when we say "human is animal" or "[human] is not inanimate," either one perceives the meaning of "human," "animal," and "inanimate," and the meaning of "this is that" or "this is not that" (*huwa huwa aw laysa huwa*) or one does not. Then we say, "[human] is animal" or "[human] is not inanimate." The first perception is conception; together with the judgment that this is that, or is not that, it is assent. "Affirmation" means: this is that, while "negation" means: this is not that.

[T27] Al-Samarqandī, *Qisṭās*, 65.4–67.17

[***assent and conception defined as perception with and without judgment***]

They said that knowledge is either conception, if it is a perception without judgment, or assent, if it is with it. The combination [of conception and judgment] is assent. But this forces them to say that the conception of the two terms of the proposition here is not a conception! So they try to avoid this [consequence], by saying: knowledge is either conception, if it is a perception without the *consideration* of judgment (*bi-dūn iʿtibār al-ḥukm*), or assent, when it is with that consideration. This position can be expressed more clearly by saying that knowledge is either conception, if judgment does not enter into it, or assent, if it does. And this is the generally accepted position of some later [logicians].

[***alternative position: assent is judgment only***]

But the older [logicians], and the verifiers among the later ones, held that assent is judgment only, and that conception of two terms is a precondition for it, but not included in it (*sharṭ la-hu lā sharṭahu*), whereas for the earlier position the opposite [was true]. It has been objected to them that if the joint form (*hayʾa*) of these three conceptions [sc. the subject and predicate terms, plus the judgment that one holds of the other] is considered, then assent would not be knowledge, because it contains something that is not known—as this joint form is not knowledge, but something that is known (*laysat ʿilman bal maʿlūma*). Otherwise, assent would be several items of knowledge, not one. This calls for discussion, which we can pass over; instead [we'll just say that] this position is more appropriate, as it more closely captures the features of assent. Because they agreed that whether an assent is evident or acquired by nature, true or false, certain or uncertain, are all considered in relation to judg-

ment only. [67] Making assent consist of the combination [of the three conceptions] does not tally well with that, for it is strange to make something evident, certain, or true, even as some of its parts are acquired, uncertain, or untrue. Now, even if this disagreement comes down to a terminological issue, and there is no point disputing over that, abandoning the first position without necessity has been disapproved of, indeed treated as a mistake by accomplished scholars. We for our part choose the position of the verifiers.

[***knowledge in the general sense is the form of something arising in the mind***]

We say then: you should know that what is meant by "knowledge" here is not knowledge explained by a firm conviction that corresponds to reality—the counterpart of ignorance—but something more general than what does or does not correspond to reality: it consists of the form of something arising in the mind. In which case there emerges a reply to the one who said that, since knowledge is divided into conception and assent, and each again is divided into knowledge and ignorance, it follows that knowledge is divided into knowledge and ignorance [see [T23] above]. [The reply is that knowledge] is conception, if that thing does not lay down an affirmative nexus or deny it, and assent, if one of those two happens. Assent, then, is for that nexus to be laid down in the mind or denied. This just means the same as the true reality of judgment. So assent is judgment, in the first case affirmative, in the second case negative. The Teacher [Aristotle] called them "affirming" (*ʾīqāʿan*) and "negating" (*intizāʿan*). This means the mental judgment, whereas the expression signifying it is called the linguistic judgment. As is well known, negation can be grasped only after grasping affirmation, since the absence of something can only be conceptualized after conceptualizing that thing's presence. Which is why the Master [sc. Avicenna] said in the *Shifāʾ* that negation is grasped or mentioned only after grasping affirmation.

[T28] Al-Samarqandī, *Qisṭās*, 69.1–71.10

[***objection to the traditional argument for dividing knowledge into necessary and inferential***]

Not all [conception and assent] is necessary, requiring no thought to attain it. Otherwise we would never be ignorant of anything. Nor is it all inferential, requiring [thought to be attained]. Otherwise we would never know anything, because of circularity or an infinite regress. Thus, for both [conception and

assent] some are inferential, some necessary. Or we might say that not all of it is necessary, since some of it requires inquiry and thought, nor is it all acquired, since some of it is attained directly and without deliberation or thinking.

But you may say: there are two doubts about the first [argument, that not everything is acquired]. *First*, on the assumption that everything is acquired, your claim that if everything is acquired, circularity or an infinite regress would follow, would also be acquired. So how is it possible for you to provide a proof for the falsity of this option? *Second*: if by "necessary" you mean that which is evident (*badīhī*), then we do not concede that if everything is non-evident there would follow circularity or an infinite regress. For [the regress] might end in something gleaned from sensation, experience (*tajribī*), intuition (*ḥadsī*), or something else that is necessary. *And if you say*: in this context, we just stop at saying that not everything is acquired. *Then I* [*the objector*] *say*: go ahead and stop, but your claim will not follow! If [by "necessary"] you mean necessary just in whatever way, then we do not concede that if everything is "necessary," we can never know anything. For [we might know it from] sensation, experience, intuition, and so on.

Response to the first: this proposition [sc. that circularity or infinite regress would follow] is known in actual fact (*fī nafs al-amr*). Now there are only two options: either on this assumption [that all knowledge is acquired, the proposition] would be known, or it would not be. If not, then the assumption must be denied, because it implies something different from what is actually the case. Otherwise [that is, if the proposition is known even on the assumption that all knowledge is acquired], then we can stop with what we said; and again, it will follow that the assumption must be denied. So either way the assumption is denied, which is what was to be proved. [71] *Response to the second*: if everything were necessary, how is it that we need to acquire [items of knowledge]? Thus the objection is defeated. *Or we might say*: not everything is acquired; otherwise acquisition would be impossible, due to the circularity or regress you mentioned. And the consequent is false. So [acquired knowledge] must depend ultimately on what simply arises in the intellect, or on sensation, experience, testimony, intuition, the widely accepted (*shahra*), convention, opinion, or a mistake. But it is well known that some of these are acquired, while others are not. *If you say*: why can't everything depend ultimately on mistakes? In that case, the consequent would not be false. *Then I say*: even if this could happen in some cases (*ṣuwar*), if we consider them all together, this is no longer possible, as with mathematical [propositions] and certainties.

[T29] Al-Samarqandī, *Qisṭās*, 71.11–75.18

[***another problem with the definition of conception***]

Someone might say: if what is meant by "conception" is the conception of a thing [only] in some respect, then we do not concede that every [item of knowledge] is non-necessary. Whereas, if what is meant by "conception" is the conception of a thing in its true reality, then we do not concede that if everything is acquired, then circularity or regress would follow. They would only follow if the conception of the true reality of each of two [items of knowledge] were to agree with the conception of the core nature (*kunh*) of the other, because knowledge of the core nature of one thing may give rise to knowing the core nature of another thing in some respect. For example, an understanding of composite quiddities may [give rise] to understanding the simple [components from which they are made], which are known in some respect, since they have descriptions[20] in terms of accidents and relations. And this respect too is also known in some respect.

[***the need for logic***]

Now, some inferential [items of knowledge] in each of these categories may be arrived at from some necessary [items of knowledge], through thinking, [73] which consists in arranging things that have arisen [in the mind] in such a way as to lead to something previously unknown. There are precise methods and specific conditions for this arrangement, which are not known by necessity. Otherwise, no contradiction would ever occur with respect to what is implied by [our] thoughts. So there is a need for rules that provide knowledge of these methods and conditions, and getting hold of the correct and incorrect among them. This is logic, which is described as an instrument made up of rules (*āla qānūniyya*); by complying with it, humans are protected from erring in their thought.

[***objections***]

It might be said: if the acquisition [of knowledge] required logic, then learning logic would be impossible, because it is not grasped necessarily in all its parts. If it were, then error in thinking would be impossible, because all the principles and the knowledge of all the methods for transitioning to [necessary items of knowledge] to inferential ones would in this case be grasped necessarily. But if something is inferential, then it is so in all its parts, or in some. So there must

20 These are nominal, as opposed to real, definitions.

be inferential reasoning that needs the rules you mentioned. But this leads to circularity or to an infinite regress. So we concede that it is possible to learn logic, but deny that it is of any use; for many people who are not logicians get things right when they think, and logicians also make mistakes. *Further, it is said*: let the first point not be answered by saying that some [items of knowledge] are evident, and others acquired from evident ones by methods that are themselves evident. For if this were so, it would follow that error is impossible when thinking or devising arguments. For if the implication of acquired [items of knowledge] from evident ones by means of an evident method is itself evident, then the minds would all agree in logic. So error in thinking would be impossible, unless other rules are needed. And what is the basis for the methods by which acquired [rules] of logic are acquired from the evident [ones] in logic? Among [these rules] are *reductio ad absurdum*, and conversion, both of which are acquired: and *reductio* depends on understanding what a proposition is, and what negation and affirmation are, as well as modality and so on. All of this is acquired. As for conversion, the situation is similar, because it needs to be proved.

[***solutions to the objections***]

[75] *Response to the first*: from the fact that [the items of knowledge] and the implication to the acquired ones taken together are evident, it does not follow that everything is known by logic. For something may depend on the conception of the terms of a proposition *and* the type of composition of that proposition *and* on some acquired [items of knowledge]. For even if the proposition is evident, knowledge of it only follows after the conception of its two terms. And the objection does not recur [when we ask how the terms come to be conceptualized], because the conception of the terms may arise by a more readily available (*adnā*) indication, or admonition to posit it, or if something is conceded as being free from error. For inferential items of knowledge are of two kinds: those that are susceptible to error, and those that are not. But when upon hearing something, one knows it with little effort, it may still be difficult to use it as a basis for something one has not heard. This is the case, for example, with understanding subject-matters and technical vocabulary, like understanding the five [Porphyrian] universals. It might be said, "here is what we mean by 'genus' and here is what we mean by 'specific difference'" and the intellect may accept this without great strain. For the most part, the book on universals follows this route. The same route is used to explain what a proposition is, what contradiction and conversion are, or the types of composition in syllogisms. The general method is *reductio ad absurdum*, and *reductio* is evident, and always depends on the terms [of the proposition] never on the relation

[between them]. Conversion, even if it is acquired, is acquired by means of *reductio* and other methods that are certain, and thus rests upon these.

Response to the second: hitting the mark [in one's thinking] may occur because one's thought stumbles upon an evident inferential arrangement like the first [syllogistic form] or a reiterative [syllogism]. Or it may just happen (*wa qad yakūna muṭlaqan*), when God gives help. But the fact that one person may be able to dispense [with logic] does not mean others can do the same.

Response to the third: error may also occur with respect to the matter [i.e. the terms], not only the form [of definitions, propositions, or the syllogism], which is the domain of logic.

[T30] Al-Bayḍāwī, *Ṭawāliʿ al-anwār*, 55.3–7

[***division of conception and assent, with examples***]

You should know that intellectually grasping a thing by itself, without making a negative or affirmative judgment about it, is called "conception," whereas with such a judgment, it is called "assent." Both fall into two types. First, the evident, that is, no inquiry or thought is required for it to arise, for instance the conception of existence and nonexistence, and [as an example of an evident assent] the judgment that affirmation and negation cannot be true together or be false together. Second, the acquired, which does require [inquiry and thought], like the conception of a king or a jinn, and [as an example of an acquired assent] the knowledge that the world is created, and that the Creator is eternal.

[T31] Al-Ḥillī, *Asrār*, 7.5–8.20

[***the need for perception***]

Given that the human soul is in its innate condition (*fiṭra*) devoid of all conceptual and assertoric knowledge, and its perfection is to achieve both with regard to both knowledge and action, evident [knowledge] alone falls short of attaining this. Most of it is achieved thanks to acquisition, which however is prone to error. And since most people do succumb to error in their thinking, the soul has been presented with an instrument, namely perception, by which it is able to attain conceptions and their interrelations, as well as affirmation and negation.

[*the need for logic*]

But this instrument too is insufficient. So there must be another, trustworthy instrument that protects from error. While the first [instrument] suffices to attain primary knowledge, this [second instrument] allows one to attain inferential knowledge, which in turn is the cause of perfection. This instrument is logic, which is described as an instrument made up of rules that shields the mind from error in thinking.

[*different senses of "thinking" as a movement of the soul*]

Thinking (*fikr*) is said of the motion of the soul through a power whose instrument is the front ventricle of the brain. [8] In other words, it is one of the rational motions. If the motion proceeds from sensible things, then it is called "imagination." ["Thinking"] is also applied in a narrower sense, to that one of these [rational] motions through which the soul turns to the conclusions it seeks, by pondering over notions of which it has [merely] descriptional [knowledge]. Then it seeks the principles of the sought conclusions until it finds them, and then returns from there to the sought conclusions. Alternatively, ["thinking"] may be applied just to the first of these two motions, not to the [second motion] in which one performs a return to some part of the sought conclusions; albeit that the ultimate goal is to return to them.

[*criticism of the argument that all thinking needs logic*]

One of the verifiers said: "thinking" in the second [sense] is that in which there is a need for logic, both in its parts and as a whole. *I say*: this calls for further inquiry. *Verification*: "principles of the sought conclusions" could be premises that are already put together ordered in the correct arrangement, or they could be premises that have not yet been put together and ordered. If he here means the first of these by "principles" (which one reaches from the sought conclusions, and from which one returns to these sought conclusions), then motion in the second sense does not need logic. For it is a natural motion that is not subject to error. If however he means by ["principles"] the second of the meanings just given, then it is the first kind of motion that does not need logic. For then it is a motion that involves ruminating (*isti'rāḍiyya*), since the soul happens upon a premise and agrees with it, and then stumbles upon another. In this case it needs logic to put together the two [premises in the correct way], but not to consider them separately. *This eminent scholar said*: that is the [type of] thinking that requires logic in its parts. But this is unconvincing, and the verification is what we have just mentioned.

[T32] Al-Ḥillī, *Asrār*, 11.16–12.17

[***comparison of the two definitions of conception and assent***]

Knowledge is either conception or assent. They have defined conception as the occurrence of a quiddity in the mind, without an affirmative or negative judgment, while assent is the affirmative or negative judgment about [this quiddity]. But some of the later logicians made assent the conception of two terms together with a judgment. On this account, judgment is only a part [of assent], and the two definitions would apply to the same things, but differ conceptually. But this is a mistake. Assent is dependent on conception either as the whole depends on the part, as on the second account, [12] or as the conditioned depends on the condition, as on the first account. For there can be no judgment if either of the terms, or the nexus between them, is unknown. For assent to occur, it is not enough that there is a conception of the two terms together with a conception of the nexus. For these [three conceptions] may also be present for those who are in doubt. So a judgment must [also] take place.

[***argument that "absence of judgment" cannot be used to define conception, with solution***]

It has been said: according to this, if you make the absence of judgment a condition for [something to count as] a conception, and a conception a condition for [something to count as] an assent, then the absence of judgment is a condition for judgment! This is absurd, because the part of something or its condition cannot be mutually exclusive of [that thing]. If on the other hand you don't make [absence of judgment] a condition [that picks out conception as just one kind of knowledge], then conception is just the same thing as knowledge, in which case you would be dividing knowledge into itself and something else [sc. assent]. They waver in their responses to this [argument]. *Some say*: it is not far-fetched to say that a thing could be mutually exclusive of its part, after all "one" is mutually exclusive of "many" yet also a part of it. *Others say*: it is not far-fetched that a thing could be divided into itself and something else. But on our view, both of these defenses are very poor. *We say*: the true response is as follows. "Conception" is used for each of these two meanings, that is, that which has as a condition the absence of judgment, and that which does not have as a condition either the presence or absence of judgment. We have to distinguish here between "the condition is the absence of judgment" and "judgment is not taken to be a condition." The first is more specific. That which is a condition for assent, or a part of it, is a conception in the [second,] more general sense. But that into which knowledge is divided, as a counterpart to assent, is a conception in the more specific sense.

[T33] Al-Ḥillī, *Asrār*, 14.11–15.14

[*taxonomy of conceptions and assents*]

Secret: among conceptions some are complete, which consist of the knowledge of the quiddity as such, and some are incomplete, which consist of the knowledge of some of [the quiddity's] accidents. Some are necessary, which are such that they do not depend on seeking or acquisition, and some are acquired, and do depend on this.

Assent may also be necessary, if it is enough to conceptualize both terms [of a proposition] for it to occur. Or it may be acquired, if in addition to a conceptualization an intermediary is required. Some assents are scientific (*ʿilmī*), and consist in firmly held belief (*al-iʿtiqād al-jāzim*) that corresponds [to reality] and is stable (*thābit*). Or it may be based on uncritical acceptance of authority (*muqallid*) if it is a firmly held belief that corresponds [to reality] but is not stable. Or, again, [assent] may be a case of ignorance, if it is a firmly held belief that does not correspond [to reality]. Lastly, [assent] may be [mere] belief (*iʿtiqād*) if it leans to one of two options while entertaining the possibility of the other. [15] "Doubt (*shakk*)" is irresolution between two beliefs, while "surmise (*wahm*)" is when opinion leans [in one direction]. Some [people] counted these two among assents, but this is a slip on their part. For if by chance the assent were to correspond to extramental reality, then the firmly held belief must be considered just as such (not insofar as it corresponds [to reality], or fails to do so—though it must do one or the other), or [considered] as connected [to reality] as an acceptance or denial. The first case [sc. the belief considered as such] is either broad acceptance—which is either acceptance by the common run of people (*al-jumhūr*) without qualification, or limited, being accepted only by a faction—or it is narrow acceptance, if it is accepted by a specific person, like a teacher, a student, or a disputant. The second case is called a "postulate (*waḍʿ*)," like the axioms in the sciences, or like the things postulated by someone who uses *reductio ad absurdum* arguments, even though they are contrary to what he believes; or like the things that someone in a dialectical debate reaches as inferences and entailments, and defends even if he only says them with his tongue [without actually believing them]. All of these together are called "postulates." A postulate may be deprived of acceptance, as in the case of postulates in some *reductio ad absurdum* arguments; acceptance of a postulate is just like the case of what is not disputed among the accepted [propositions]. "Postulate" is also used for all positions that a speaker expresses, and in this sense it is more general than "acceptance."

[***analogous taxonomy of ignorance***]

Secret: since knowledge is divided into two, namely conception and assent, its counterpart, simple ignorance, is likewise divided into ignorance of conceptions and ignorance of assents. Someone seeking to learn something unknown directs his search toward one of these two.

CHAPTER 2

The Subject Matter of Logic

In late antiquity, a central debate concerning Aristotle's logical corpus concerned the subject matter of the *Categories*. Did it concern words, things, or concepts? As Simplicius says in [T2], none of these proposals seem tenable: it is grammar that deals with words, metaphysics that deals with things, and psychology that deals with concepts.[1] So it would not seem to be the task of logic to divide any of these terrains into ten classes, these being the categories (substance, quality, quantity, etc.). An influential solution given by Porphyry is that the *Categories* concerns "the primary imposition of expressions … for it concerns simple significant words insofar as they signify things." He explains the difference between "primary" and "secondary imposition" at [T1]: when a term is used for a thing like gold or the sun, this is first imposition, but when one term is used for another, as when "gold" or "sun" is identified as a "noun," this is second imposition.

Al-Fārābī adapted the Porphryian account of the subject matter of the *Categories* to say that the subject matter of logic is utterances insofar as they signify, not "things," but "intelligibles (*maʿqūlāt*)," and the intelligibles signified by those utterances [T3].[2] This gets in all three of Simplicius' candidates for the subject matter: things, words, and concepts. Thus the horse in the field is called by the word "horse," which expresses the concept of a horse (the same concept would be expressed in other languages by words like "*Pferd*" or "*faras*"). The logician studies these words and concepts, for instance by observing that the word "horse" expresses a concept which is a species. Here *horse* will be a primary intelligible, since it refers directly to things like the horse in the field, but *species* will be a secondary intelligible, since it refers to a primary intelligible; this of course is comparable to Porphyry's distinction between primary and secondary imposition.

1 For a fuller selection of passages on the question see R. Sorabji (ed.), *The Philosophy of the Commentators, 200–600 AD: a Sourcebook in Three Volumes* (London: Duckworth, 2004), vol. 1, 3b; the following quotation from Porphyry is passage 3b1, taken from his commentary on the *Categories*, 58.3–6.

2 See K. Karimullah, "Influence of Late-Antique (ca. 200–800 A.D.) Prolegomena to Aristotle's *Categories* on Arabic Doctrines of the Subject Matter of Logic: Alfarabi (d. ca. 950 A.D.), Baghdad Peripatetics, Avicenna (d. 1037 A.D.)," *Archiv für Geschichte der Philosophie* 99 (2017), 237–299.

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That brings us to Avicenna's influential, but controversial, view [T4, T5, T6].[3] The logician does not think about primary intelligibles like *horse*, but secondary intelligibles like *species* or *genus* [T5]. Against al-Fārābī's conception, Avicenna argues that not just any intelligible is studied in logic, but only those that are at a higher level of abstraction, and thus have no direct correspondent outside the mind [T4]; there can be a horse in the field, but not a species or genus. This seems quite plausible. Though words like "Socrates," "human," and "horse" might appear in a logic textbook, this would only be for the sake of helping the reader by giving an example to illustrate a logical rule. The actual rules, by contrast, would concern more abstract notions, namely the secondary intelligibles. In particular, they would concern these insofar as they can help us to produce new knowledge [T6], paradigmatically by laying down the norms of valid argumentation.

Here we may observe that in one sense, Avicenna has left the ancient dispute behind. He is talking about the subject matter of *logic*, not of the *Categories*, a work he in fact considers of dubious relevance for logic anyway.[4] On the other hand, he is picking up another idea that carried over from late antiquity to the Arabic medieval tradition: that logic is an instrument, not a part of philosophy, as mentioned by Avicenna's student Bahmanyār [T7].[5] Its function is to help us reach new scientific knowledge, for instance by explaining how to combine premises validly to reach a conclusion [T6]; see also al-Ṭūsī's explanation at [T19]. This is also the issue which draws the attention of Abū al-Barakāt [T10], for whom logic is a tool for deductive reasoning, which when employed correctly, will guard us against error and disagreement. He is thus selective in his use of Avicenna: though he keeps the idea of knowledge production, he does not mention secondary intelligibles as the subject matter of logic.

It would be worth pausing at this point to clarify what is meant by talking about the "subject matter" of a science in the first place. As our texts repeatedly state, the subject matter is "that whose necessary accidents are investigated in the science." This is potentially misleading, since one may easily slip into

3 See A. Sabra, "Avicenna on the Subject Matter of Logic," *Journal of Philosophy* 77 (1980), 746–764.

4 See our chapter on the Categories below.

5 See K. Ierodiakonou, "Aristotle's Logic: an Instrument, Not a Part of Philosophy," in N. Avgelis and F. Peonidis (eds), *Aristotle on Logic, Language and Science* (Thessaloniki: 1997), 33–53; T.-S. Lee, *Griechische Tradition der aristotelischen Syllogistik in der Spätantike* (Göttingen: 1984), ch. 2; and for the Arabic reception P. Adamson, "The Last Philosophers of Late Antiquity in the Arabic Tradition," in U. Rudolph and R. Goulet (eds), *Entre Orient et Occident: la philosophie et la science gréco-romaines* (Vandoeuvres: 2011), 1–43.

the assumption that it is the subject matter itself that is being investigated.[6] That is not the case, though. Strictly speaking, zoology does not investigate animals, but the intrinsic or necessary features of animals, like their habitats or diets. Applied to logic, this means that on Avicenna's view the logician should investigate the intrinsic features of secondary intelligibles, with a view to the way these intelligibles may be used to attain new knowledge. The Avicennan view was perpetuated and reformulated by his immediate followers Bahmanyār [T7] and Lawkarī [T8], and also by al-Sāwī [T9] and al-Rāzī [T13], with the latter version being the one most later logicians respond to directly, as at [T15]. Al-Sāwī picks up Avicenna's explanation of why logicians had since antiquity concerned themselves with language, given that "expressions" play no role in logic's task according to Avicenna: this is for purely pedagogical reasons. A similarly pragmatic reason for interest in language is found at [T16].

Another noteworthy feature of these reformulations of Avicenna is that they mention the pairing of conception and assent, which we dealt with in the previous chapter. For now, we can say that the contrast is basically between having an understanding of a single term, e.g. having a "conception" of what a giraffe is, and actually endorsing propositions concerning terms, e.g. "assenting" to the claim "giraffe is animal." As we will see, the contrast between conception and assent was important for Avicenna, as it had been for al-Fārābī. But it did not feature in Avicenna's account of the subject matter of logic. Still, one can easily relate conception and assent to that account, as Bahmanyār does at the start of [T7]: these are the two forms in which knowledge may arise, and as we've already seen, logic investigates the features of secondary intelligibles specifically with an eye to knowledge production. This is also how Suhrawardī relates conception and assent to logic in [T11–T12], with commentary by Ibn Kammūnā at [T27].[7] Still it is a sign of things to come that al-Suhrawardī places so much emphasis on conception and assent in this context. In a parallel development at the same time, al-Rāzī structured the logic section of his *Mulakhkhaṣ* in two parts, dealing respectively with conceptions and assents.

It's possible that this structure, in such an influential work, inspired al-Khūnajī, who was apparently the first to say that the subject matter of logic

6 This point is made well by K. El-Rouayheb, "Post-Avicennan Logicians on the Subject matter of Logic: Some Thirteenth- and Fourteenth-Century Discussions," *Arabic Sciences and Philosophy*, 22 (2012), 69–90, at 82. This article has more generally been invaluable to us in putting the present chapter together.

7 For the immediate context of [T12] see [T10] in our chapter Conception and Assent.

is *not* what Avicenna had claimed, but rather the "objects of conception and assent" [T14]. On the conceptualization side logic investigates the explanatory phrase that spells out a conception, or classifies the intelligible as a species, a genus, etc. On the assent side logic investigates features of assents, either alone (e.g. that a certain assent is the contrary of another one) or in combination (which is where we would get to the various forms of valid and invalid argument form). This new approach was accepted by al-Khūnajī's student Ibn Wāṣil [T15], as well as al-Abharī [T16–17], al-Kātibī [T20–23], and al-Urmawī [T24–25]. This is a telling point in historical terms, as it illustrates something we'll be seeing repeatedly in this volume, namely that al-Khūnajī was a particularly innovative and influential figure in the history of logic.

As al-Kātibī notes [T20], the dispute is also an important one in philosophical terms. If al-Khūnajī's proposal is correct, then logic has a broader remit than it would on Avicenna's view: it would consider "things that do not attach to secondary intelligibles at all," like essentiality or accidentality, or being a species. Now, this may seem puzzling: aren't things like "being a species" secondary intelligibles? Yes, but remember the caution we gave above, that what is investigated in a science is not the subject matter itself, but its intrinsic features. And "being a species" is an intrinsic feature of (or "attaches to") a *primary* intelligible like *horse*, not a secondary intelligible. So with al-Khūnajī's approach we are back to a view more like al-Fārābī's, according to which primary intelligibles can be included in the subject matter of logic.

There is an obvious objection to be made here, which is that the subject matter of logic becomes *too* broad, indeed, becomes identical to the subject matter of the sciences in general. After all everything one deals with in any science is "an object of conception or assent." This is one of the points made by al-Ṭūsī in defense of the Avicennan view at [T18], a defense followed by al-Ḥillī [T29] and Quṭb al-Dīn al-Rāzī.[8] Arguably though the objection had already been anticipated by and answered by al-Kātibī: a science is identified not only by its subject matter, but also the point of view from which that subject matter is treated [T21]. So for example the logician can study the primary intelligible *giraffe*, not in the way that a zoologist would, but with a view to the fact that this is a species term, or how it would enter into a validly constructed argument. This same point is stressed in a lengthy discussion of the whole debate found in al-Samarqandī. As he says, the logician is concerned with "the objects known through conception and assent not as such, but inasmuch as they lead to the thing sought" [T28]. So in the end, the

8 For his remarks on the topic see El-Rouayheb, "Post-Avicennan Logicians," 85–87.

ancient idea that logic is an instrument for achieving knowledge, stressed by Avicenna himself, was used to defend an alternative account of logic's subject matter.

Texts from: Porphyry, Simplicius, Avicenna, Bahmanyār, al-Lawkarī, al-Sāwī, Abū al-Barakāt, al-Suhrawardī, al-Rāzī, al-Khūnajī, Ibn Wāṣil, al-Abharī, al-Ṭūsī, al-Kātibī, al-Urmawī, Ibn al-Nafīs, Ibn Kammūna, al-Samarqandī, al-Ḥillī.

[T1] Porphyry, *In Aristotelis Categorias Commentarium*, 57.35–58.3 [trans. Zimmermann]

[*terms of second imposition*]

Thus it was the work of the first imposition to call this thing "gold" and to name the matter that was such as to shine in this way "sun", while to say that the word "gold" was a noun (*onoma*) was of the second imposition, which signified what type of word (*tous tupous*) such and such a word was.

[T2] Simplicius, *In Aristotelis Categorias Commentarium*, 9.8–10.6 [trans. Chase, mod.]

[*questions about the scope of the Aristotle's* Categories]

Now some say that [the *Categories*] are about words (*phônai*), and that the aim and scope (*skopos*) has to do with simple words, and that it is the first part of logic. Just as the first part of the book on propositions [i.e. *On Interpretation*] is about composite words, but not about things (*pragmata*), so this [book], being about the parts of the proposition, would be about words. […] [9.19] Others, however, do not accept this as the aim and scope. It does not, they say, pertain to the philosopher to theorize about words, but rather to the grammarian, who investigates their modifications, configurations, and changes in word-endings, as well as their proper usages and their types. They say the aim and scope is the very beings (*onta*) which are signified by words; and that these are what is said (*ta legomena*). […] [9.28] In opposition to these considerations, however, is [the fact that] the present book is a part of the study of logic, whereas to occupy oneself with beings as such is to engage in that philosophy which is metaphysical, and in general, primary. Others say that the aim and scope is neither significant words nor the things signified, but rather simple concepts (*noêmata*). For if, they say, the discussion in the [*Categories*] is about the ten genera, and these are posterior and [merely] conceptual (*ennoêmatika*), then the discussion is

about such concepts. […] [10.4] These people, however, should have considered that to speak about concepts as such does not pertain to the study of logic, but rather to that of the soul. Of all these people, each one had an imperfect grasp of the aim and scope [of the *Categories*].

[T3] Al-Fārābī, *Iḥṣāʾ al-ʿulūm*, 17.5–18.3 [trans. Karimullah, mod.]

[***the subject matter of logic is utterances insofar as they signify intelligibles***]

As for the objects (*al-mawḍūʿāt*) of logic, i.e., those things about which rules are given, they are intelligibles insofar as they are signified by utterances, and utterances insofar as they signify intelligibles. This is so, because we justify an opinion to ourselves by thinking, then giving an account, and then setting up in our minds (*nuqīmu fī anfusinā*) objects and intelligibles (*umūran wa-maʿqūlātin*) whose role is to justify this opinion. We justify [the opinion] to other people by presenting them with arguments (*aqāwīl*) by which they will understand the objects and intelligibles whose role is to justify this opinion. Nor is it possible to justify any opinion with just any chance intelligible, in any number and under any chance condition, composition or order. Rather, each opinion we want to prove needs definite objects and intelligibles (*umūrin wa-maʿqūlātin maḥdūda*) that are of a certain number, standing in certain conditions, and composed and ordered in a certain fashion. And this is also how the verbal utterances by which we express these intelligibles must be, when we want to justify our opinion to someone else.

[T4] Avicenna, *Shifāʾ, Manṭiq, Madkhal*, 46.3–48.4 [trans. Di Vincenzo, mod.]

[***the subject matter of logic is not "utterances insofar as they signify meanings"***]

There is no good in the claim of those who state that the subject matter of logic is the inquiry into utterances insofar as they signify meanings, and that the logician's art is precisely to speak of utterances insofar as they signify meanings. On the contrary, the state of affairs must be conceived as we mentioned.

Those who became confused and perplexed about this did so simply because they did not really (*bi-l-ḥaqīqa*) determine the subject matter of logic and the class of existents to which it is proper. For they found that existence is

of two sorts: of things in external reality, and their existence in the mind. They therefore assigned the inquiry into external existence to one or more philosophical disciplines, while the inquiry into mental existence, and how [existence] is conceived in [the mind], was assigned to a discipline or to a part of [another] discipline, not having made any differentiation, or realized that items in the mind are either things that are conceived in the mind and acquired from external reality, or items which, insofar as they are in the mind, have nothing corresponding to them in external reality. As the understanding of both of these pertains to a discipline, one of the two becomes a subject matter for the discipline of logic with respect to an accident that occurs to it. As to which of these two it is, it is the second member of the division [sc. things in the mind with no correspondence to external reality]. As to which accident occurs [to it], it is either that it leads to the realization in the soul [24 Madkour] of another intellectual form that was not there before, or that it is useful for, or an obstacle to, attaining [a new intellectual form].

Since these [philosophers] did not really distinguish either the subject matter of the discipline of logic, or the respect under which it is its subject matter, they stammered and were confused. You by contrast will learn later, through a more powerful explanation, that each theoretical discipline has a subject matter, and that it inquires into nothing but the accidents and states of its subject matter. You will also know that the inquiry into the subject matter itself can pertain to one discipline, while the inquiry into its accidents pertains to another discipline. This then is what you need to know about the state of logic.

[T5] Avicenna, *Shifāʾ, Ilāhiyyāt*, 7.16–19 [trans. Sabra, mod.]

[***the subject matter of logic is secondary intelligibles***]

As you have learned, the object of the science of logic is the secondary intelligible concepts (*al-maʿānī al-maʿqūla al-thāniya*)—those that depend on (*tastanidu ilā*) the primary intelligible concepts—with respect to how they may be used to arrive at the unknown from the known, not insofar as they are thoughts (*maʿqūla*) having a mental existence that is not attached to matter at all or is attached to non-corporeal matter.

[T6] Avicenna, *Manṭiq al-mashriqiyyīn*, 10.15–20

[***the subject matter of logic is meanings combined to reach new knowledge***]

The subject matter [of logic] is meanings insofar as they are subjected to a composition by which a connection is reached for the attainment of something in our minds that was not in our minds [before]. But not insofar as these are things in concrete reality (*fī l-ʿayān*), like substances, quantities, qualities, etc. For if we turn to their being substances, quantities, qualities, etc., then even if this is why they are "things," this is only an effect of, or judgment about, the way in which they are suitable to be part of an explanatory phrase or an argument.

[T7] Bahmanyār, *Taḥṣīl*, 5.7–6.12

[***logic is the science that teaches the correct form and matter of definitions and arguments***]

Logic is the theoretical art by which it is known which forms and matters yield a correct definition, one that is [properly] called "definition," as well as correct syllogisms, which are then called "demonstration" (*burhān*). It also teaches about which forms and matters yield a [merely] adequate (*iqnāʿī*) definition, which is then called a "description" (*rasm*), and a [merely] adequate syllogism, which is then called "stronger" when it yields an assent that is alike to the certainty attained in dialectic, or "weaker" when it yields only a prevailing opinion (*ẓann ghālib*), as in rhetoric. And it reveals which form and matter yield an incorrect definition, and from which form and matter the incorrect syllogism derives (it is then called "fallacy" or "sophism"); and which form and matter yield a syllogism that does not evoke assent at all, but only imagination, such that the soul desires something or shuns it, or loathes it, or rejects it or pursues it, which is then called "poetic syllogism".

And this is the utility of the art of logic. Its relation to reflection (*rawiyya*) is like the relation of grammar to speech, and of prosody to poetry. However, whereas a sound innate disposition and good taste (*dhawq salīm*) may dispense with learning grammar or prosody, there is for the most part nothing in the human disposition that could dispense with first acquiring this instrument (*ālā*) in order to make [good] use of reflection.

[*logic as an instrument*]

[6] It is true to say of logic that it is a part of science in an unqualified sense (*al-ʿilm al-muṭlaq*), which is the inquiry into things unknown, and it is also true to say of it that it is an instrument, because it is used outside of logic too. Insofar as it is an instrument, logic has a more general concept predicated of it, namely science. Just as a human being, as such, takes as a predicate a more general concept, namely "animal," so that it is said: "human being is an animal." The difference between its being a part and being an instrument is the difference between these two concepts, as one of them is more specific and the other more general. Hence, everything that is an instrument for science in this way is a part of science in the unqualified sense, but not vice-versa.

Logic is assigned a different [role in] knowledge in that it is a measure (*mikyāl*) for [knowledge], and the measure is also its matter (*mādda*) in some respect, since the object of inquiry (*maṭlūb*) is logical. When we say "every moving [thing] is a body, and the soul is not a body, therefore the soul is not a moving [thing]," in this [syllogism] there is no *logical* matter at all. Rather, the knowledge of logic in this example lies in our learning that this composition is productive. The utility of logic in this [example] lies in the fact that it is a measure. If you say, "this figure is productive," you have made use of logic, because it is the matter in this case.

[T8] Al-Lawkarī, *Bayān al-ḥaqq*, 119.3–120.3

[*reformulation of Avicenna's view on the subject matter of logic*][9]

The quiddities (*māhiyyāt*) of things may be in concrete reality (*fī l-aʿyān*), or in conception (*fī l-taṣawwur*), and they are considered from three perspectives (*iʿtibārāt*). (a) The quiddity insofar as it is such.[10] (b) The perspective insofar as [the quiddity] is in concrete reality, in which case there are accidents accruing to it that are proper to this [type of] existence for that quiddity. (c) The perspective insofar as it is in conception, in which case, [again], there are accidents accruing to it that are proper to this [type of] existence, like being-a-subject or being-a-predicate, or within predication, universality or particular-

9 The text is an almost verbatim rendering of Avicenna, *Shifāʾ*, *Manṭiq*, *Madkhal*, p. 15.1 ff.

10 An alternate reading spells out the point: "insofar as it is this quiddity" (*bi-mā hiya tilka l-māhiyya*), which is also Avicenna's wording.

ity, and substantiality or accidentality, and still others that we will treat [in due course]. However, in extramental existents there is nothing that would [correspond to] substantiality or accidentality in predication, and nothing that would [correspond to] a grammatical subject (*mubtada'*) or a grammatical predicate (*khabar*), nor to premise or syllogism, or other things of that sort. Hence, if we want to reflect on the things and their order, we necessarily need to make them enter into [120] our conception, and thus they will necessarily have [certain] features in the conception. Thus we unavoidably need to consider [these] features that they have in the conception. We look, in our thought (*fikra*), to attain things [that were heretofore] unknown, and we do that by [starting out] from things that are known.

[T9] Al-Sāwī, *Baṣā'ir*, 29.1–30.11

[***the subject matter is secondary intelligibles***]

The subject matter of every science is that whose features (*aḥwāl*) that belong to it essentially are investigated in that science. These features are called "essential accidents"; you will learn about them [later]. Now the usefulness of logic has become clear: its fullest extent is making known (*ta'rīf*) the explanatory phrase and argument [form] taken without qualification. That is, by way of universal and general rules that are not specific to one thing rather than another. Then, once this is known, one may dispense with learning every definition and demonstration anew, [one by one]. Rather, the rules [of logic], stripped of any specific subject matter, apply to all specific definitions and proofs. The subject matter of [logic's] inquiry, therefore, is the meanings (*ma'ānī*) which are the matter (*mawwād*) of the pure [forms] of definitions and proofs, insofar as they are prepared through an arrangement conducive to grasping something (*taḥṣīl amr*) in the mind. And these meanings are the secondary intelligibles.

What we mean by "secondary" is this: in the human mind, there are forms and quiddities of things that exist outside the mind. Then the mind operates on them, making judgments about some in light of others, or attaching to some of them things that do not belong to them [intrinsically], or else subtracting from some of them accidents that are external to their true natures. This operation of the mind makes some of them a judgment (*ḥukm*), others something upon which judgment is passed (*maḥkūm*). Addition and subtraction are features that belong to these quiddities as they exist in the mind, so the quiddities are the primary intelligibles and the features that belong to them after they obtain

in the mind are secondary intelligibles, namely the quiddities being predicates or subjects, universals or particulars, and others that you have already learned.

Therefore, the subject matter of logic is these secondary intelligibles, insofar as they lead to grasping knowledge that was not there [before].

[***the role of the primary intelligibles***]

As for the primary intelligibles, one inquires into them only when one seeks to apply these rules, once internalized, to the specific definitions and proofs, so as to align them [with the things defined]. In this case, one turns to the primary intelligibles that are the quiddities of existent things, like their being a substance, a quantity, a quality, and so forth; in short, the genera of existent things, as you will learn [later].

[***why the study of language is included in logic***]

Thus humans could in principle study logic by plain thinking and on their own, without asking for the help of an instructor lecturing or teaching about it, if this were possible. But since teaching has to proceed by way of lecturing and teaching, and this can be done only with the help of utterances, utterances inevitably also become objects of [logical] inquiry, especially as humans think in combined meanings that cannot be separated from imagining their utterances together with them, to such an extent that it is as if humans talked to themselves by means of imagined utterances when they begin to talk or think.

[***the structure of logic***]

The meanings and utterances which are the matter (*mawwād*) of explanatory phrases and arguments are composite. Hence, they can only be known in their composition once the individual elements have been grasped. And that not just in any way, but insofar as they are prepared for the composition. Of course, we must first know the features of simple utterances and simple meanings in this way, and then we follow this by getting to know the explanatory phrase leading to a [new] conception. Since conception naturally precedes assent, it deserves to be put first. But we shall preface this by making known what the explanatory phrase requires in terms of composition, and then go on to make known the arguments according to their types, then the types of their composition that exemplify them.

So our book shall comprise, in line with this approach, three parts: the first on simple [utterances and meanings], the second on the explanatory phrase that leads to conception, and the third on phrases that lead to assent.

[T10] Abū al-Barakāt, *Muʿtabar*, 5.7–7.8

[*logic as the art of reaching new knowledge on the basis of previous knowledge*]

Among all the scholars (*ʿulamāʾ*), it is the philosophers (*ḥukamāʾ*) who seek the knowledge of existents and the truth of it as it is in itself. But among them there is disagreement and dispute about their sciences and the schools of thought that have been passed down from them. The beginner seeking knowledge despairs because of this. When dispute arises, this indicates failure to get things right, either entirely or partially, and then the beginner says: if the human being were to reach through his inquiry the clear truth which obtains for him with reliability and certainty, then there would be no difference of opinion among the scholars, and dispute would cease among the philosophers, about whom it is said that they seek the truth as it is in itself in the science of existents, not according to a variety of goals that differ in what they seek on account of the different schools of thought. […]

[5.15] Concerning this they made scattered and dispersed statements in their scientific theories. Then these were enlarged by theories and supplemented by thoughts, until Aristotle wrote a book on this called *The Science of Logic*, in a number of parts, which comprise the methodological arts used in teaching rational and theoretical [things] (*al-taʿlīmiyya al-fikriyya al-naẓariyya*) regarding which human beings perform conceptualization and assent. For this aim, this book is more complete [than others] and the intended aims are more comprehensive than anything that was transmitted to us from the ancients in this art.

The arguments (*kalām*) [of the book] indicate that its intended aim is to mention the causes on grounds of which I have responded to scholars of the theoretical sciences concerning their theories, and dealt with the differences between them regarding their schools of thought and sciences, so that as a result of these [causes], one may either arrive at the correct position, or fall into error. [And its aim is to mention] how the former is achieved and the latter is avoided, because the subject matter that [6] the logician is concerned with is that by which one may arrive at an understanding of things [formerly] unknown and the knowledge of them. This [sc. that by which one reaches understanding] consists in meanings (*maʿānī*) that were already in people's minds, even before they inquired into whatever they wanted to reach in terms of understanding and acquired knowledge. These [meanings] are used in this [undertaking], by deploying them in a certain way, so as to acquire a composed form [sc. that of a valid argument], as we mentioned.

For this reason, [Aristotle] says that each teaching occurs in the mind (*dhihnī*), by way of previous knowledge. Hence, what is sought in [the science of logic] is how human beings arrive, by means of prior understanding and knowledge, at the attainment of the acquired understanding and knowledge that was sought; and in which way this happens. The goal [of logic] is to supply that by which human beings get to acquire understanding and knowledge of things that were [formerly] unknown, and to understand the true reality of [these things], as opposed to what is false, and the truth in what is said about them, as opposed to what is wrong.

[***critique of the view that the subject matter is significant utterances***]

Some people say that the subject matter of logic is utterances insofar as they signify meanings, but they are wrong. That is in fact [the subject matter of] the science of linguistics. The aim of logic is to use it with regard to what is called "signified," because the logician does not include utterances in his science except accidentally—just as they are included in the other sciences and communicative (*mufāwaḍa*) arts. But he applies his mind to understanding things [formerly] unknown on the basis of things [formerly] known. But the instances of knowledge that one seeks to understand, and those that were already in the mind, have no need for utterances. Even if utterances are part of this science, then their being part of the scope [of logic] is only accidental, not essential, as you will learn is the case in Dialectic, Rhetoric, Sophistics, and Poetics: whereas these people [sc. the upholders of the view that utterances are the subject matter] suppose the case of the others to be like that of [logic]. This being so, what is intended essentially are the meanings, and the utterances are merely accidental, and [are included] for the sake of [the meanings]. The fact that utterances are involved in language for those who are present, insofar as they signify meanings [for them], is just like the fact that writing is part of language for those who are not present, insofar as it signifies utterances [for them]. But just as it does not follow that writing is the subject matter of the science of logic, merely because it encompasses acts of writing; so it is not necessary that utterances be the subject matter for it, merely because one uses them to talk and communicate. Only someone who is mistaken about this issue will refuse to admit that utterance can dispense with writing, and that other things [sc. thinking about meanings] can dispense with utterance.

[***usefulness of logic***]

[7] The upshot of what has been said is that the usefulness of this science is that it guides minds towards the true realities of cases of understanding and knowledge, and keeps one clear of the deviances and errors that beset them.

Its aim is the understanding of that by which there is guidance and refraining from error, and how these two occur. Its subject matter is that by which one arrives at the aforementioned guidance and refraining from error, on the basis of prior understanding and knowledge of things in the mind, insofar as one arrives at the former by means of the latter.

The things sought [in logic, then,] are the rules by which one gains acquired understanding and knowledge by means of prior understanding and knowledge in the mind. These rules are the theoretical guide which [allows us to move] from prior understanding and knowledge to that which is acquired through them and from them.

[T11] Al-Suhrawardī, *Mashāriʿ, Manṭiq*, 7.1–8.10

[***the aim of logic is to learn how to reach conception and assent;*** **cf.** ***T7***]

You have learned from the books that there is no object of inquiry (*maṭlūb*) that is not either a conception or an assent, and that the way to reach these is the explanatory phrase and the argument, respectively. The aim of logical inquiry lies in the ways to reach [an object of inquiry] and in the simple [elements] of which the composites are made up, as well as the form (*ḥayʾa*) of compositions. In general, it is the inquiry into the matter of these two ways to reach [an object of inquiry] and their forms [with regard to their being, in the case of arguments] sound or not, and [in the case of explanatory phrases] sufficient or deficient.

[T12] Al-Suhrawardī, *Manṭiq al-Talwīḥāt*, 2.1–3.3

[***form and matter in logic***]

For each object of knowledge, non-existence or existence is not [determined] by thinking, but on the basis of what is presently available, or that which is to be made available. So there must [already] be something known in order to arrive at something unknown, not by chance, but by some arrangement (*tartīb*), through which one is led to what is unknown. What is [already] known to thought plays the role of matter, while the arrangement plays the role of form. Thought will get things right when these two are right, and get things wrong when one of them is wrong. Each of the two, I mean matter and form, may be either complete or deficient; and the deficient and false may resemble the complete. Innate human disposition is not sufficient to discern between

these two states, otherwise there would be no confusion among the sages; only the Son of Man is helped by the holy spirit, and sees things as they are. But we [normal people] need an instrument to discern wrong from right. Logic, then, is a science in which are taught the types of arrangement that bring one [to the intended object of knowledge]: whatever follows this is correct, whereas what does not is incorrect.

[*the role of proofs*]

Now, the unknown just like the known falls into two categories [sc. conception and assent]. For each of the things unknown in these two categories, there must be a composite [item of] knowledge related to it. If the non-innate does not end in the innate, then what is to be made available will not be available. The conceptions leading to such things are called "explanatory phrase," and may be definition or something else, while the assents leading to such things [are called] "argument," and may be demonstration or something else. The explanatory phrase and the argument are two methods in the sciences. It has become the business of the logician to know the parts of the connections and their compositions, to form an argument leading to the desired conclusion in each of the two, as a specific arrangement of forms and matters. And when the composite stands in need, both in concrete reality and in the mind, of a verification of the simple [parts], then [the logician] first needs to investigate the simple parts of which the composition is made up—not in every respect but insofar as they are fit to be so composed. Utterances are the counterparts of meanings, so that inquiry into [utterances] frees one from having to inquire into the meanings [themselves], as [the utterances] are parallel to them. The parts of what leads [3] to a conception are prior to it [i.e., the conception]; and they are also prior to the parts of the argument [sc. the premises], because, being prior to the former, they are prior to the latter. There are items of necessary knowledge (*ḍarūriyyāt*) that are [simply] pointed out, without the need for [prior] knowledge or any instrument; and much of this science [sc. logic] is like that. On this, other [rules] are built. There is no need for yet another set of rules, otherwise there would be an infinite regress.

[T13] Al-Rāzī, *Manṭiq al-Mulakhkhaṣ*, 9.14–10.11

[*the subject matter is secondary intelligibles; logic divided into study of conceptions and study of assents*]

The subject matter of every science is that whose accidents it investigates, insofar as these belong to it as such. [10] The subject matter of logic is the secondary

intelligibles, insofar as it is possible to proceed by means of them from things [already] known to things [as yet] unknown.

Explanation of "secondary intelligibles": human beings first have conceptions of the true natures of things, then they judge some of them by means of others, either by way of restrictive specification (*taqyīd*), or by predication (*khabar*). A quiddity's being made the target of a judgment in this way, is something that accrues to it only once it has first been conceptualized. Hence it is of the second order. Therefore, the inquiry into these notions (*iʿtibārāt*)—not absolutely, but with regard to how one may correctly proceed by means of them from things known to things unknown—this is logic. Without doubt then, the subject matter of [logic] is the secondary intelligibles in the sense just mentioned. Since you now know that the utmost objective of this science is the knowledge of the rules (*qawānīn*) by which one may attain the knowledge of unknown things by way of conceptions and assents, we have of course arranged our objectives for this science in two parts [that is, dealing with conceptions and assents].

[T14] Al-Khūnajī, *Kashf al-Asrār*, 8.13–9.2

[***the subject matter is objects of conception and assent***]

Logic investigates the objects of conception and assent, not as such, but insofar as they lead to one of the following: (a) an object of inquiry that is conceptualized, either (a1) in a proximate way, and in this sense it is called "explanatory phrase"; or (a2) in a remote way, like their being universal, particular, essential, accidental, genus, specific difference, and the like; or (b) an object of inquiry that involves assent, either (b1) in a proximate way, and in this sense it is called "argument (*ḥujja*)," or (b2) in a remote way, like being a proposition, or being the contrary of a proposition, or being the contradiction of some other [proposition], and so on; or (b3) even more remotely than this, their being subjects, predicates, and the like. These notions are no doubt external to the concept (*mafhūm*) of these objects of knowledge, and are attached to them insofar as they are what they are, and the subject matter of every science is that [9] into whose accidents it investigates, those that attach to it insofar as it is what it is. So it is obvious that the subject-matter of logic is the objects of conception and assent.

[T15] Ibn Wāṣil, *Nukhbat al-fikar*, fol. 4^{v}15–5^{v}2

[*Presentation of al-Rāzī's view and its rejection in favor of al-Khunajī's view*]

As for the subject matter [*of logic*]: you should know that the subject matter of every science is that whose essential accidents are investigated in that science. By "essential accidents" we mean whatever belongs to a quiddity when considered by itself (*bi-iʿtibārihā fī nafsihā*) or when considered [5^{r}] as coextensive (*musāwin*) with it in terms of generality and specificity, regardless of whether in itself it is more general, more specific, or coextensive. Thus, the subject matter of geometry is measures, while the subject matter of medicine is the human body with regard to what heals it or what makes it sick: their essential accidents are studied by the geometer and the physician.

Now that you know this, we say: the Imām Fakhr al-Dīn [al-Rāzī] and others held that the subject matter of logic is secondary intelligibles insofar as it is possible to proceed by means of them from the known to the [formerly] unknown. The meaning of "secondary intelligibles" is that which belongs to the forms of things existing outside the mind, like being-a-subject, being-a-predicate, being-a-genus, being-a–specific-difference, and other such notions (*iʿtibārāt*). And these things are intellectually grasped secondarily, after having firstly grasped things outside [the mind]. Since the inquiry is about these notions insofar as it is possible to proceed by means of them from the known to the unknown, this must be [the subject matter] of logic.

You should know, however: the truth is that the subject matter of logic is conceptions and assents, as our master Afḍal al-Dīn al-Khūnajī held, may he rest in peace. For that whose essential accidents the logician investigates is [conceptions and assents]. These are conducive to what is sought as a conception, either in a immediate way by considering [what is sought as a conception] as being an explanatory phrase, or in a remote way, by considering it as being one of the five predicables. Or [these are conducive] to what is sought as an assent, either in a immediate way by considering [what is sought as an assent] as being an argument (*ḥujaj*), or in a remote way by considering it to be propositions that are contraries or not, *salva veritate* conversions or not, contradictories or not; or in a still more remote way, by considering it as being its subject or predicate. As for the questions [to be treated in logic], this is the inquiry into these [5^{v}] accidents in themselves. And as for the principles [of logic], we already mentioned that these are either immediate (*badihiyya*), or derived from theoretical reasoning (*naẓariyya*) that depends on what is immediate and free from error.

[T16] Al-Abharī, *Khulāṣat al-Afkār*, 104.7–105.10

[*the subject matter of logic is conceptions and assents, not secondary intelligibles, nor utterances inasmuch as they signify meanings*]

We say then: a simple meaning does not lead to assent, nor to the conception of the true nature of a thing. Rather, the way to reach them must be a composition. The logician studies the composition that leads to conceptions, this being called the "explanatory phrase"; and [studies] the composition leading to assent, this being called an "argument." But the study of compositions requires the study of the simple items insofar as they are prepared for the composition. Hence, the logician inquires into conceptions and assents insofar as they lead to conceptions, or insofar as being led to these depends on them, like being-universal, being-particular, being-essential, or being-accidental. [Also the logician studies them] insofar as they lead to assent, or insofar as being led to these depends on them: either immediately, like their being-a-proposition or the contradictory of a proposition, the contrary and the contradictory of its contrary; or remotely, like their being predicates or subjects. Thus the subject matter of logic, that is, the thing about which the logician inquires with regard to its concomitants insofar as it is what it is, is nothing other than conceptions and assents.

It is wrong to say that the subject matter of logic is secondary intelligibles (*al-maʿqūlāt al-thāniyya*), that is, definitional or predicative combinations, insofar as it is possible that one is led by means of them to things [formerly] unknown. For just as the logician studies [secondary intelligibles], so does he study their simple [constituents]. Nor is it right to say that the subject matter of logic is utterances (*alfāẓ*) inasmuch as they signify meanings. For the logician studies utterances only from the perspective of communication, because it is impossible to learn logic without utterances. So if this were possible merely by thought without utterances, that would suffice. Also, it is difficult for the soul to arrange meanings without imagining utterances. So necessity demands the use of utterances. This being so, it follows that utterances have different features on account of which the meanings arranged in the mind are different. Therefore, the logician is required to study the features of utterances from this perspective.

[T17] Al-Abharī, *Tanzīl*, Quoted from al-Ṭūsī, *Taʿdīl*, 144.14–20

[***the subject matter of logic is conceptions and assents***]

The subject matter of logic—I mean that about which the logician inquires with regard to its concomitants, insofar as it is what it is—is nothing other than conceptions and assents. For [the logician] inquires into what is connected to conceptions, and what this requires, in terms of the thing being universal or particular, essential or accidental, and so forth; and also inquires into what is connected to assent, and what this requires, either in terms of immediate requirements, like the thing's being a proposition and a contrary and a contradiction, and so forth, or in terms of remote requirements, like the thing's being a subject or a predicate. These are the states that belong to conceptions and assents insofar as they are what they are. For sure then, the subject matter of [logic] is conceptions and assents.

[T18] Al-Ṭūsī, *Taʿdīl*, 144.21–146.3 [Responding to T17]

[***three arguments against al-Abharī's view that the subject matter of logic is conceptions and assents***]

I say: if [al-Abharī] meant by "conceptions and assents" everything to which these two names apply, which is [all] sorts of knowledge in its entirety (*fahiya al-ʿulūm bi-asrihā*), because knowledge is divided into these two, then in that case the implication (*mafhūm*) is that the subject matter of logic would be all sorts of knowledge. But clearly this is not the subject matter of logic. If, however, he meant by "conceptions and assents" [145] what these two [terms] signify *insofar as* they are conceptions and assents, then they cannot be the subject matter of logic from this perspective [either, and for three reasons]:

First: the conception, insofar as it is a conception, cannot include any concept other than that of "conception," such as "universal" and "particular," "essential" and "accidental," and so forth. For it is a conception only insofar as it is just a plain perception, whereas it is "universal" inasmuch as it possesses an [additional] concept (*mafhūm*) because it applies to a plurality. There can be no doubt about the difference between these two perspectives. This applies likewise to assents, and whatever else [al-Abharī] mentioned or failed to mention.

Second: given that [al-Abharī] acknowledges that the logician inquires into whatever is connected to conception, to assent, or both, [the subject matter of

logic] cannot be conception insofar as it is conception and the assent insofar as it is assent, because a thing is not connected to itself.

Third: conception and assent, insofar as they are conception and assent, are not definition or syllogism, insofar as those are definition and syllogism. Conception and assent are by their quiddities perceptions (*idrāk*), whereas definition and syllogism are by their quiddity statements (*qawl*); definition and syllogism are not essential accidents for [conception and assent] nor do they fall under their genera, or vice versa. "Conception" and "assent" are only true of what is understood (*mafhūm*) from their parts, and of that which has definition and syllogism connected to it. They are true of other sorts of knowledge not because they are conception and assent, but because one, the other, or both apply to all of this by way of a general accidental predication of their accidents.

If it is said: what is connected to a conception or assent is a cause for it, and the study of something remains incomplete if its cause is not studied, so the study of definition and syllogism remains incomplete unless conceptions and assents are studied. *Then we say*: the study of the cause of the subject matter of a science is not part of the science which investigates that subject matter. Otherwise, the study of affirming the Necessary Existent would be a part of all sciences.

[***Avicennan view: the subject matter of logic is secondary intelligibles***]

The truth is that the subject matter of logic is secondary intelligibles, insofar as their study leads from things known to things [formerly] unknown, or to something similar to that, like implications, convictions, [146] imaginations, and so forth. Conception and assent belong to the class of secondary intelligibles, just like definition and syllogism and their parts. The universal and the particular, the subject and the predicate, proposition, antecedent, conclusion, and so forth, also belong to the class of [secondary intelligibles], as specified by the aforementioned stipulation explained by the adepts of this art.

[T19] Al-Ṭūsī, *Asās al-iqtibās*, 5.12–22

[***logic is the science of manipulating meanings to acquire new knowledge***]

The science of logic is the understanding of meanings through which one may reach the various types of acquired knowledge, and to reach each piece of knowledge from another one. It is the knowledge (*dānestan*) of how to manip-

ulate (*taṣarruf*) a meaning in a way that leads to the object of inquiry (*maṭlūb*), and of the ways that it fails to do so (or if it does, then not in the correct way). The art of logic consists in there being, besides the understanding of meanings and the knowledge of how to manipulate them, also a faculty combining these two virtues such that it understands, without deliberation or thinking, the various sorts of meanings, and through various types of manipulation, establishes an ability to discover the various types of knowledge, warding off error and confusion, and from following in the footsteps of those who fall prey to error. This much is a pointer (*ishārat*) to the conception of the quiddity of the science of logic, and a reminder (*tanbīh*) of its utility, within the bounds of what is possible in this chapter, because to fully circumscribe its essence (*kunh*) is only possible after it has been set out in detail.

[T20] Al-Kātibī, *Jāmiʿ al-daqā'iq*, fol. 4r5–4v16[11]

[*the subject matter of logic as secondary intelligibles*]

The subject matter of every science is that whose essential accidents are investigated in [that science]. [By essential accidents] I mean that which attaches to (a) the essence, like the capacity to wonder attaches to "human being"; or (b) what is coextensive with that, such as the capacity to laugh for "human being," for this attaches to it by means of the capacity to wonder, which is coextensive with it; or (c) to something more general under which it falls, like movement [attaches] to "human being," because [the human being] is a body; or (d) to something more general under which it does *not* fall, as movement [attaches] to "the white" because [the white] is a body; or (e) to something more specific, as the capacity to laugh [attaches] to "animal", because [animal] is human being, and in that case it is an extraneous accident.

Now that you have learned this, we say: the subject matter of logic is secondary intelligibles inasmuch as it is possible to proceed by means of them from things known to things [formerly] unknown. *Explanation of "secondary intel-*

11 The manuscript used in this volume, MS Istanbul: Topkapı Serayı Müzesi, Ahmet III 3372, corresponds but is superior to MS Paris: Bibliothèque nationale de France, Arabe 2370, used in the previous volume. There also is a new edition that appeared too late to be taken into account for this volume: al-Kātibī al-Qazwīnī, Shams al-Dīn. *Jāmiʿ al-daqā'iq fī kashf al-ḥaqā'iq*. Ed. by ʿA. Ismāʿīl and R. ʿAbd al-Jawwād Rabīʿ. Cairo: 2023.

ligibles": human beings first conceive the true realities of things, and then they judge some of them by means of others, either by a definitional or by a predicative judgment, taking them to be universal or particular, an essence or an accident, a genus, a specific difference, or a species, a subject or a predicate, and other such features (*aḥkām*) besides. Those true realities are primary intelligibles, and once they are investigated, [further] features are predicated of them, which only came to attach after those were known first. Therefore, these features are on a second level of intellection. Logic, then, is the investigation of these features—not absolutely, but with regard to how one may correctly proceed by means of them from things known to things [formerly] unknown. As a result, it follows that [logic's] being an investigation of how to proceed from them in the way mentioned is, from this perspective, an essential accident of secondary intelligibles. Thus said the Shaykh [Avicenna] in the *Shifāʾ* and the Imām [al-Rāzī] in the *Mulakhkhaṣ*.

[***the relevance of this subject matter to conception and assent***]

Now, some people made the subject matter [of logic] the objects [4^{v}] of conception and assent. This would inevitably be more general than [a consideration of] secondary intelligibles in the way mentioned, since one would include conceptions that are not among the features [just] specified (*al-aḥkām al-taqyīdiyya*). And this is closer to being correct, since the logician may investigate things that do not attach to secondary intelligibles at all, let alone in the way mentioned, but are simple meanings that arise in the mind. For he also investigates the concepts of being an essence or an accident, a species, a genus, a specific difference, a subject or a predicate, and other intelligibles attaching to simple meanings.

Now that you have learned this, you should know: the logician investigates conceptions insofar as they lead to another conception, either (a) by a immediate connection (that is, without any intermediary), and considered in this way it is called the explanatory phrase; or (b) he may investigate them insofar as they lead to another [conception] by a remote connection (that is, with an intermediary), like their being universal, particular, essential, accidental, genus, specific difference, and so forth; or (c) he investigates assents insofar as they lead to another [assent] either by a immediate connection, and when considered this way, this is called an "argument (*ḥujja*)"; or (d) he investigates them by a remote connection, like their being a proposition, its contrary or its contradictory, and so forth; and (e) he also investigates conceptions insofar as they lead to assent by a still more remote connection, like their being subjects and predicates.

There can be no doubt that these notions attach to conceptions and assents in one of the ways mentioned, so the subject matter of [logic] is what we have just mentioned. Explanatory phrase is stipulated as being prior to argument, whereas the priority of conception to assent is by nature. For every assent inevitably needs a conception of the subject and the predicate [involved in the assent], either as essential or as true under some aspect, it being possible to express [the assent only] by these two and by the conception of the judgment [itself], because whoever is ignorant of one of these three cannot possibly pass a judgment about two given things.

[T21] Al-Kātibī, *Munaṣṣaṣ*, fol. 5^{v}11–6^{v}2 [Commentary on T13]

[*the view of the "verifiers" that the subject matter of logic is secondary intelligibles*]

I say: The subject matter of each science is that thing whose essential accidents are investigated in the science. By "essential accidents" I mean the concomitants that attach to a quiddity as such, that is, to it in itself (*li-mā hiya hiya ayy li-dhātihā*). [...]

[5^{v}22] *We say*: Logic also investigates the secondary intelligibles, insofar as it is possible to proceed by means of them from things known to things [formerly] unknown. And if "proceeding by means of them from things known to things [formerly] unknown" belongs to secondary intelligibles as such, then surely it should be said that the subject matter of logic is secondary intelligibles insofar as it is possible to proceed by means of them from things known to things [formerly] unknown.

Explanation of "secondary intelligibles": A person either has a conception of the true realities of things, or does not. (a) Then he may manipulate them by judging some of them to hold of others in the form of a restrictive judgment (this being a compound, in which the second part restricts the first). And then one may introduce an utterance for the two taken together, so that the phrase may be replaced by a single utterance, as when we say "human" in place of "rational animal." However, not in the sense that every single one of its individual parts is replaced by a single utterance, because generally it is not possible that the individual parts of a restrictive compound are signified without single utterances. Thus when we say "rational, knowing, worshipping, sitting animal on a given day in a given house, which engages in sewing and goldsmithery," no single utterance may replace this, [6^{r}] since we do not have a single utterance

which signifies what is signified by "animal" with the above qualifications. And there are many compounds like this. But if we restrict ourselves to just some of the individual phrases, then we may replace them with single utterances. Know this!

(b) Alternatively [one may form a judgment that is] predicative, which means that [the quiddity] is judged to be (b1) universal, particular, essential, accidental, as a genus, a specific difference, a species, a subject, a predicate, and other such features (*aḥkām*); or (b2) [there are judged] to attach to some of them certain other items (*umūr*) that are not among the [ones just mentioned], or (b3) [they are judged] to lack certain external accidents. This judgment, attachment, or deprivation are items superadded to these quiddities, and they accrue to them [only] after they have arisen in the mind.

Hence, these quiddities are first intelligibles, but they are then made the object of two types of judgment just mentioned, that is, restrictive and predicative judgment, so that an item that is not among [the first intelligibles] is either taken from them or attached to them, which only attaches to the quiddity once it has arisen in the mind, so that they are on a second level. These things, then, are the secondary intelligibles.

[***logic contrasted to metaphysics and psychology***]

Now, the investigation of these notions, I mean these quiddities being universal, particular, essential, accidental, a genus, a specific difference, a species, a subject, or a predicate, and other such features, judged by restrictive judgments taken from them or attached to them, is not [an investigation of them] absolutely. For if they are investigated with regard to the question of whether they exist or not, then they are, from that perspective, investigated by the science that investigates existence and its concomitants, which is First Philosophy. Whereas if they are investigated as to whether they exist in the soul, or both in the soul and outside it, then they are, from that perspective, investigated by psychology. But [when they are investigated] with respect to how one may proceed by means of them from things known to things [formerly] unknown, this is logic.

[***different sciences investigate the same thing from different points of view***]

You should know that this does not correspond to their [sc. the verifiers'] explanation of the subject matter absolutely, for they offered the explanation that the investigation [in logic] concerns its essential accidents. In this case the subject matter would be whatever these essential accidents belong to abso-

lutely, without restriction or any particular perspective. In the abovementioned examples, they [only] restricted the bearer of accidents in the ways mentioned, that is, with respect to their essential accidents, and made them the subject matter [of logic]. But in that case, they ought to restrict the subject matter, or isolate the bearers of the accidents in the examples given from the restrictions that have been mentioned, and then they could make them subject matters.

But this latter idea [i.e., that one ought to consider only those essential accidents that are relevant to logic] is absurd, because then a single thing would have some of its essential accidents investigated in one science, and others in another science. Take for instance the body of the celestial sphere: if the natural philosopher investigates it insofar as it moves and rests, while the expert of shapes studies it insofar as it has certain dimensions, and we make the celestial body the subject matter of both, then the two sciences will not be distinguished. But if we restrict the celestial body in one of the two sciences by a certain restriction, and in the other science by another restriction, then there will be a distinction between the two. Hence, we must say that the subject matter of each science is that whose essential accidents are investigated in [that science], not *absolutely*, but insofar as it is the subject of inherence (*maḥall*) for these accidents, corresponding to the subject matter mentioned in the examples.

[*why a logician might nonetheless deal with primary intelligibles and utterances*]

As for the primary intelligibles, these are the quiddities that are substances, quantities, qualities, and others besides from among the highest genera. The logician only investigates them because he tries to teach the student the applicability of these rules to definitions and demonstrations specific to them. This is why the Master [Avicenna], in the *Ishārāt*, excluded inquiry into the ten categories from logic. This [applies] when a person learns logic on their own, without the recourse to anyone else. But when teaching and learning does happen in [logic], this is possible only by means of utterances. So utterances, too, came to be investigated in it. And how could it be otherwise? For a person's thought, [consisting] in a combination of meanings, becomes insignificant when separated from the imagination of utterances, so that it is as if he were talking with himself by means of imagined utterances.

Further, since the ultimate intention and the highest object sought in this science is understanding of the rules by which it is possible to acquire things [formerly] unknown from conceptions and assents, and the investigation of

the composite is possible only after having investigated the simple parts (not absolutely, but from the perspective of how they are suitable for composition), surely then the logician must first investigate simple utterances and simple meanings, with a view to how they are suitable to be combined into explanatory phrases and arguments. Next, this is followed by what is needed in order that the explanatory phrase may be composed; and then [the logician] understands the explanatory phrase. This is in turn followed by what is necessary for an argument to be composed; and then [the logician] knows the argument in its [different] [6^{v}] forms (*aṣnāf*). This is why the Imām [al-Rāzī] initially undertakes an investigation into how conceptions are acquired, before the investigation of how assents are acquired, for conceptions are by nature prior to assents, according to what you have learned above.

[T22] Al-Kātibī, *Sharḥ Kashf al-asrār*, fol. 6^{r}12–31 [Commentary on T14]

[***distinction between immediate and remote items connected to the objects of conception and assent***]

I say: the aim of these words [of Khūnajī's] is to maintain that the subject matter of logic is conceptions and assents. Before we get into the explanation of this, you should know that the subject matter of each science is that whose essential accidents are investigated by the person considering the science, like shapes in geometry, numbers in arithmetic, or the human body (insofar as it is healthy or sick) in medicine, or obligatory acts in jurisprudence.

Now, by "essential accidents" we mean the concomitants that attach to a subject as such, that is, by virtue of its essence, or by virtue of being coextensive with its essence, or else by being more general than something that enters into the true reality of the subject. By contrast, the concomitant that attaches to the subject by virtue of being more general and external to the true reality of the subject, or that is more specific than the subject, is not an essential accident of it; it is merely said to be a immediate accident of it.

Having understood this, you should know that the subject matter of logic, according to what we have just said in the explanation, consists in things known by conception and assent (*al-maʿlūmāt al-taṣawwuriyya wa-l-taṣdīqiyya*). For the logician investigates the essential accidents of these. For he investigates conceptions insofar as they connect [to form] a conception [that was formerly] unknown, by way of a immediate connection, that is, without intermediary. When considered as such, it is called an explanatory phrase, which is a defini-

tion, a description, or the like. But [the logician] investigates them also insofar as they connect [to form] a conception by a remote connection, that is, with an intermediary. For he investigates them as to whether they are universal, particular, essential, accidental, a genus, specific difference, species, proper accident, and so forth, as you will learn. He also investigates assents, insofar as they connect [to form] an assent that [was formerly] unknown by a immediate connection. When considered as such, it is called an argument, which is either a syllogism, a deduction, or an induction. But he investigates them also insofar as they connect [to form] an assent that [was formerly] unknown by a remote connection, because he investigates them insofar as they are a proposition, the contrary of a proposition, the contradictory of a proposition, a consequence of a proposition, an antecedent or a consequent. And he investigates conceptions insofar as they connect [to form] an assent by a yet more remote connection, because he investigates them insofar as they are subjects or predicates, an object of judgment, a means of judgment, objects of description, or descriptions. These notions are the essential accidents of conceptions and assents, because they are items that are external to them, but attach to them as such.

[T23] Al-Kātibī, *Sharḥ Kashf al-asrār*, fol. $7^{r}21$–$7^{v}18$

[*response to T13: report and criticism of the Avicennan/Rāzīan view*]

The Master [Avicenna] in the *Shifā'* held that the subject matter of logic is the items that accrue to true realities in the mind, insofar as the latter are in the mind, not dwelling on them as something extramental inasmuch as accidents accrue to those. These are [then] connected, so that another intellectual form arises in the soul, either by furthering or by preventing that connection.

The Imām [al-Rāzī] held the same in the *Mulakhkhaṣ*, except that he presented this view in full detail, saying that the subject matter of logic is second intentions insofar as it is possible to proceed by means of them from things known to things [formerly] unknown. He explains "secondary intelligibles" by saying that people first have conceptions of things, then judge some of them to hold of others, either by way of restrictive specification (*taqyīd*), as when we say "rational animal", or by predication (*khabar*), as when we say "human is rational". A quiddity is made an object of judgment in this way only once it has been conceptualized. Hence this perspective on it belongs to the second order. Next, [al-Rāzī] says that therefore, the inquiry into these notions—not absolutely, but with regard to how one may correctly proceed by means of them

from things known to things unknown—this is logic. So it follows that the [property of] being such that one may proceed by means of them from things known to things [formerly] unknown, by the correct path, is an essential accident of secondary intelligibles in the way mentioned. As you have learned, the expert of any science inquires precisely into the essential accidents of its subject matter.

But this calls for further investigation. If this notion [i.e., the property of secondary intelligibles that one may proceed by their means from things known to things formerly unknown] were an essential accident of secondary intellgibles in the way mentioned, then knowing them in this way would imply [7^{v}] necessarily having knowledge of this notion. For whatever attaches to a thing essentially, whether by way of being coextensive or by being something more general that enters into its true reality, is implied [by knowledge of that thing]. Otherwise, to know what attaches to it, one would need some other intermediary, so that what attaches to each of these items would attach to something else again [and so on, *ad infinitum*]. This is absurd, and clearly is not the case. For if the knowledge of secondary intelligibles implied, in the way mentioned, the knowledge of this notion, then the one who knows those in this way would also know logic. But obviously this is not so.

We respond to this objection by saying: We do not concede that whatever attaches to something by means of one of the aforementioned ways [i.e., by being coextensive with or by being more general than it] is necessarily implied. [...] [7^{v}7] For when we [first] conceive of secondary intelligibles in the way mentioned, and [then secondly] we conceive of how it is possible to proceed by their means from things known to things [formerly] unknown by the correct path, the mind need not get to the second stage, because nothing at the first stage involves turning to anything further. This would only have followed if the essential accident were implied by an intermediary coextensive with the subject and by a general concomitant of it, and if the implication of the intermediary coextensive with it were obvious. But this is not so. [...]

[***agreement with al-Khūnajī***]

[7^{v}13] From what the Imām [al-Rāzī] mentioned, it is clear that what the Master [Avicenna] meant by the things that accrue [as accidents] to what is in the mind are the restrictive and predicative judgments. And it is [also] clear that the truth is what the author [of *Kashf al-asrār*, i.e. al-Khūnajī] holds, because logic investigates things that do not accrue to secondary intelligibles *and* things that do accrue to them in the way mentioned. The former, because it investig-

ates conceptions insofar as they are universal, particular, essential, accidental, genus, specific difference, species, proper accident, general accident, etc., in the way that you have learned. The latter, because it investigates assents insofar as they are a proposition, the contrary of a proposition or a contradictory.

[T24] Al-Urmawī, *Maṭāliʿ*, 4.8–15

[*the subject matter is conceptions and assents, and in the first instance conceptions*]

The subject matter of every science is that whose accidents are investigated [in this science], which attach to it as such (*al-lāḥiqa li-mā huwa huwa*). It is conceptions and assents whose accidents, which attach to them as such, are investigated in logic. These [accidents] consist in their bringing one to a sought conception or sought assent, by a connection that is either immediate or remote. So these [sc. conception and assent] are the subject matter of logic. When they are connected immediately so as to form a conception, this is called "explanatory phrase"; and so as to form an assent, an "argument." The former is prior by convention, because of the priority of conceptions to assents, and by nature, because if the initial knowledge of the subject and predicate involved [in the assent] were not conceptualized, then no judgment would be possible. But the judgment about something need not mean conceptualizing it in its true reality; as one may judge that a certain body occupies space while being ignorant of its true reality.

[T25] Al-Urmawī, *Bayān al-ḥaqq*, fol. 2^{r}11–18

[*the accidents of conceptions and assents*]

Know that every science has a subject matter, namely that whose accidents are investigated [in this science], which attach to it as such, like the human body in medicine, and the natural body in the science of physics, and legally obligatory acts in jurisprudence. Now you will learn that what is investigated in logic are conceptions and assents, not without qualification, but with regard to how one proceeds from known conceptions and assents to things [formerly] unknown, to conceptions and assents that are reached either immediately or remotely. That which is reached immediately with regard to conception is simply an explanatory phrase, like definition and description. What is reached remotely are, for example, the fact that the conceptions are universal or particular, genus or specific difference, and so on. While what is reached

immediately with regard to assent is simply an argument, like syllogism and induction (*istiqrā'*), what is reached remotely is the proposition being universal or particular, predicative or hypothetical, a converse or a contraposition, or particular-quantified, and so on. And there is no doubt that these items attach to conceptions and assents as such. Hence, conceptions and assents are the subject matter of logic in the way mentioned.

[T26] Ibn Al-Nafīs, *Sharḥ al-Wurayqāt*, 7.6–8.10

[***the subject matter is concomitants of essences that exist mentally***]

Logic is the science in which one knows how to discriminate between the true definition and the ways that [definition] can go wrong; and between the valid syllogism and the ways that it can go wrong.

Its usefulness is that its precepts prevent the mind from error in thought.

The subject matter [of logic] is secondary intelligibles with regard to how we put together a compound (*ta'līf*) through which we come to know what [was formerly] unknown.

Verification of "secondary intelligibles": every true reality has certain concomitants (a) when considered by itself. For example, every triangle has three angles whose sum is equal to two right angles. And [every true reality] has certain concomitants (b) when considered as existing extramentally. For example, every [8] triangle in the actual world has some position (*jiha*). And [every reality] has certain concomitants (c) when considered as existing in the mind. For example, it necessarily belongs to triangle when conceived in the mind that it be a universal, and a genus for equilateral [triangles], and a species for [geometric] figures. This last sort of [concomitants] are the subject matter of logic. There is no doubt that their existence in the mind comes only after the [mental] existence of the quiddities; they are intellected in a second step.

The reason we say this is the subject matter of logic is simply that logic investigates the definition and the syllogism and what goes along with them, and both of these are composed. But every compound can be known only once its simple elements are known, with regard to their being suitable for composition.

The simple elements of a definition are, for instance, genus and specific difference. As for the syllogism, it is put together from premises, which in turn are

put together from simple elements. The logician investigates these with a view to what is made a subject, and what a predicate, and the premises insofar as they are universal or particular, etc. But these are all secondary intelligibles.

[T27] Ibn Kammūna, *Sharḥ al-Talwīḥāt*, 17.12–20.4

[*commentary on T12*]

I say: from the beginning of the section up to here, this is an introduction to explain the scope (*gharaḍ*) of logic. Here at this point, [al-Suhrawardī] explains both the scope and the quiddity of logic. That of which a composite consists is the matter (*mawādd*), and correct procedure (*intiqāl*) is what leads to the object of inquiry (*maṭlūb*), whereas the incorrect [procedure] is what does not lead to it.

By his words "the unknown just like the known falls into two categories," [al-Suhrawardī] means that, just as the thing known is divided into known conception and known assent, so the unknown is divided into unknown conception and unknown assent. And with his words "there must be a composite [item of] knowledge related to it," he points to what I mentioned, namely that the unknown [18] does not correspond to just any known thing. Rather, for every unknown it must be possible to obtain a corresponding object of knowledge. By his words "degrees of forms and matters" he means their perfection, and also deficiency or invalidity, which [however] resemble perfection.

The meaning of his words "[the logician] first needs to investigate the simple parts of which the composition is made up—not in every respect but insofar as they are fit to be so composed" is that the simple parts out of which the composition consists can be investigated in various ways. But the logician need not to investigate those simple parts in all respects, just like the builder need not investigate the bricks as to whether they are composed of atoms, or whether they are the end of a regress that calls for an existent that is necessary in itself—rather [the builder] needs to know which of them are loose or firm, and other things that play a role in their being fit for composition. And that is what we mean by their being essential, accidental, a genus or a specific difference, as concerns simple parts that lead to a [new] conception. This [sc. what leads to conception] is the "explanatory phrase." As for their being particular, unquantified, positive, modalized, absolute, contrary, or not contrary, this concerns simple elements insofar as they lead to a [new] assent. This [sc. what leads to assent] is "argument."

[*Al-Suhrawardī*] *said*: "Utterances are the counterparts of meanings, so that inquiry into [utterances] frees one from having to inquire into the meanings [themselves], as [the utterances] are parallel to them." *I say*: this is as we explained, namely that utterances signify meanings in one of three ways, and from this we know that the meanings are signified in the same ways. If an utterance is known as being universal, or particular, then this is known about the meaning, too. This and similar cases are what is meant here by "counterparts."

[*Al-Suhrawardī*] *said*: "The parts of what leads to a conception are prior to it; and they are also prior to the parts of the argument [sc. the premises], because, being prior to the former, they are prior to the latter." [19] *I say*: The part is necessarily prior to the whole. For if the part does not exist, neither does the whole, whether extramentally or in the mind. But the opposite is not necessarily true. The parts of what leads to a conception (which is the explanatory phrase) are for instance the essential and the accidental, and genus, specific difference, and proper accident. The parts of the argument are the propositions in their different kinds and forms. Since conception, which is reached by explanatory phrase, is prior to assent, which is reached by way of argument, it follows that one must discuss explanatory phrases before discussing arguments. Now, the parts of the explanatory phrase are prior to the explanatory phrase itself, because the part is prior to the whole. In turn the explanatory phrase is prior to the parts of the argument, because its parts are the propositions, and they are composed from the simple elements, which in some cases may need to be made known by the explanatory phrase. The parts of the argument are prior to the argument itself, according to what [was said] above. Since the natural arrangement is like this in the bare facts (*fī nafs al-amr*), it is more appropriate that the arrangement of the discussion be laid out in such a way as to correspond to it.

[*Al-Suhrawardī*] *said*: "There are items of necessary knowledge (*ḍarūriyyāt*) that are [simply] pointed out, without the need for [prior] knowledge or any instrument; and much of this science [sc. logic] is like that. On this, other [rules] are built. There is no need for yet another set of rules, otherwise there would be an infinite regress." *I say*: this argument is, as it were, the answer to an anticipated question. The question would be this: if this logic is made up of items of necessary knowledge, then there would be no need to learn it. If on the other hand it is among the things known by inquiry, then it either needs itself, which is absurd, or it needs another set of rules, and then the same argument will be applied to them, and an infinite regress would follow, because each set of rules would need another set of rules, and so on to infinity. Which is also absurd. The answer is that we reject the initial set of options, and say instead:

some of it is known necessarily, some of it by inquiry. Furthermore, the part that is known necessarily may still need to be learned, because there are items of necessary knowledge that have to be called to attention and [20] for which one needs a reminder (*tanbīh*). The reason it is known necessarily is not that it never escapes the mind, but that it needs no prior object of knowledge or instrument to acquire it. Much of this science is like that, for instance the productive mood in the first figure [of a syllogism]. Other [rules] are built on that, this being the part of logic known by inquiry, like the moods of the two other [syllogistic] figures. And part known by inquiry needs no further set of rules, as that would lead to a regress.

[T28] Al-Samarqandī, *Qisṭās*, 77.2–81.4

[***each science studies the essential accidents of its subject matter***]

The subject matter of every science is that whose essential accidents it investigates, the essence being the basis of their exposition. These may either be without intermediary, like "capacity for wonder" in the human, or by way of being coextensive, like "capacity for laughter," by the intermediary of "capacity for wonder," or by way of being a part of it, like motion by the intermediary of being a body. For the basis for the exposition of these classes (*aqsām*) is the essence. Concerning that which is an accident by the intermediary of an external item, this is either something more specific, like "capacity for laughter" for animal, by dint of being human, or it is more general, like movement for the white thing by dint of being a body. But it is not an essential accident if the essence does not enter into the basis of this exposition. This applies likewise to that which is an accident by intermediary of something else, like heat for a body by way of heating. They call the first two categories "remote accident" and obviously the third belongs to this type too. So, there are six categories: three of them are essential accidents, and three are not. The list should thus be clear.

[***the secondary intelligible view***]

The verifiers (*muḥaqqiqūn*) *among both the early and later logicians said*: logic in itself investigates universal and particular, essential and accidental, subject and predicate, in other words the secondary intelligibles. But not as such, for that would belong to first philosophy. The inquiry about them in logic is about the principles, not the questions, but with a view to the way in which it is possible to proceed by means of them from things known to things [formerly] unknown, and also in which way this should be constructed. It's like how, when the investigation is about columns and bricks, they are not investigated inas-

much as they are simple or compound, hot or cold by nature, organic or inorganic, but with regard to how the house can be put together from them, and how the completion of the house depends on them, like their being loose or firm, straight or crooked, big or small. Likewise, logic investigates them [i.e. the secondary intelligibles] only insofar as they are needed for the business of joining [them together]. Secondary intelligibles are then the subject matter of logic.

[***primary, secondary, and tertiary intelligibles***]

The meaning of "secondary intelligibles" is this. When we conceive of the quiddities and true natures as such, then these are primary intelligibles. [79] But when we pass judgments on these, whether definitional (*taqyīdiyya*) or predicative (*khabariyya*), for example that this is universal and that essential, and this accidental, and other such judgments, then their being so are secondary intelligibles. Then, when we pass judgments about secondary intelligibles, whether definitional or predicative, then their being so is at a third level. Logical inquiry operates at this level [too], since it investigates [the intelligibles as] being a genus, specific difference, species, proper accident, general accident, definition, description, and their being a proposition, the contrary of a proposition, and the contradictory of a proposition, syllogism and analogy, and so forth. This is the perspective from which logic investigates them as part of the secondary intelligibles and uses them in the business of conjoining them. These are the essential accidents of secondary intelligibles, since being-a-genus and being-a-specific-difference only belong to the essence inasmuch as it is essential. And the proper and general accident belong to the accidental inasmuch as it is accidental. The proposition belongs to the combination of subject and predicate and the judgment, inasmuch as they are subject, predicate, and judgment, while the syllogism accrues to the combination of propositions. This is the teaching of the verifiers.

[***rival view: the subject matter is more general***]

But some of the later logicians [i.e. *al-Khūnajī*][12] *disagree, and say*: the logician investigates universal and particular, essential and accidental, subject and predicate, and these are among the "questions" (*masā'il*) [raised in the science]. But they take the subject matter to be more general than secondary intelligibles, so they incorporated these features in logic.

12 Al-Khunajī is named (with the sobriquet "author of the *Kashf*") as the proponent of this view in al-Samarqandī's commentary on his own text, *Sharh Qisṭās al-afkār* (MS Yale: University Library, Beinecke, Nemoy 1410), at 14r13.

[***correct view: logic studies intelligibles insofar as they connect to yield knowledge***]

The correct view is for us to say: the subject matter of logic is the objects known (*maʿlūmāt*) through conception and assent not as such, but inasmuch as they lead to the object of inquiry (*maṭlūb*) by a immediate connection, which when considered as such is called "explanatory phrase," or by a remote [connection], like being universal, particular, essential, accidental, genus, species, proper accident, or general accident; or else, [as they lead to] a object of inquiry (*maṭlūb*) as an assent by an immediate connection, which when considered as such is called "argument", or by a remote [connection], like being a proposition, a contrary, another contradictory, and so forth, or by another remote [connection], like being subjects and predicates, and the like. This is what they [sc. the "later logicians"] mentioned.

[81] Perhaps they overlooked the fact that these [i.e. objects of conception and assent] are the principles, as we have established. Alongside which they would be forced into another mistake, namely holding that everything which logic investigates is either a conception or an assent. So if the subject matter of logic is set down as being the objects of conception and assent, then logic would be investigating the subject matter itself, and not its accidents. Thus far the verification of this issue.

[T29] Al-Ḥillī, *Asrār*, 10.16–11.5

[***refutation of al-Fārābī's view***]

Some people thought that the subject matter of [logic] was utterances.

But this is a ridiculous error. For the logician's inquiry into utterances is not of the first order (*bi-l-qaṣd al-awwal*); if it were possible to pass on what is in the mind to someone else without the mediation of utterances, then one could dispense with utterances altogether. The relation of the utterance to those who are present is like the relation of writing to those who are absent. Why then did they make the subject matter of [logic] concern something that applies only to those who are present, and not those who are absent?

[***refutation of al-Khūnajī's view***]

The later [logicians] thought that the subject matter of [logic] was conception and assent, because the logician studies the means to reach these (like the

explanatory phrase and the argument) and that on which these two depend (like being-a-genus, [11] being-a-specific-difference, being-an-essence, being-an-accident, being-a-subject, being-a-predicate, the proposition and its contrary), and the latter items belong accidentally to things known by way of conception and assent, which therefore are the subject matter [of logic].

But this too is an error, because if they meant by "conceptions and assents" everything to which these names apply, namely all of the sciences, then one must understand from this that the subject matter of logic is all of the sciences in their entirety, which is wrong.[13]

13 The passage goes on to repeat almost verbatim al-Ṭūsī's arguments against al-Abharī in T18.

CHAPTER 3

The Semantic Triangle

A fundamental question in the philosophy of language is how words signify. Actually, there are two questions here. First, how does a given word come to have a particular meaning, so that in English the sound "horse" refers to horses and not cows? Second, what is the mechanism by which a token utterance of a word signifies? When I say or write the word "horse" what gives the utterance or written sign its power to signify horses in general or some single horse?

Within the Aristotelian tradition it was broadly assumed that the answer to the first question is that words come to have their meaning by convention. It is because of a tacit agreement that when I say "horse" the intended meaning is understood by other speakers of English. Indeed Aristotle actually includes conventionality in his definition of the "name (*onoma*)" [T1]. He thereby rejects an alternative view, according to which names have their signification by nature—a proposal explored in the dialogue *Cratylus* by his master Plato.[1] Of course appealing to convention does not end the discussion, since there are various points of significant detail one might want to sort out. How for instance does the convention arise in the first place? In the texts gathered here we see that the generally accepted answer among both philosophers and grammarians was "imposition (*waḍʿ*)" [T9, T21], what modern-day philosophers of language have called "baptism." An original name-giver uses a certain sound to signify a certain thing and if this proposal is adopted by other language users it survives as convention.

However it was also noticed that there are exceptions. There are exclamations and onomatopoeia, which signify "by nature." An example given by Avicenna and repeated in later authors is the coughing noise that gives us to realize the person making the noise has a respiratory illness, assuming this is what is meant by "trouble in the chest" [T5, T21]. Avicenna contends that such sounds still count as "significant expressions" since they are made of phonemes or "letters (*ḥurūf*)" and do convey a meaning. In a sign of Avicenna's pervas-

1 See e.g. D. Sedley, *Plato's Cratylus* (Cambridge: 2003), F. Ademollo, *The Cratylus of Plato: a Commentary* (Cambridge: 2011), and for the later ancient engagement with the debate between naturalism and conventionalism, R.M. van den Berg, *Proclus' Commentary on the Cratylus in Context* (Leiden: 2008).

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ive cultural influence this point is taken up by grammarians like Ibn Yaʿīsh, who however cautions that such a significant natural expression does not qualify as a "word" [T16]. The noise made by (presumably) all humans when they have chest trouble is not part of any language since languages are by convention.

Before we get to that issue though, we should note that the phenomenon of naturally signifying expressions played a role in a debate over Aristotle's definition in [T1]. In [T5] Avicenna alludes to a criticism of that definition, namely that it is superfluous to stipulate that a name is a *conventional* expression, because all expressions are conventional. To repair the definition, one could say that a name is a kind of *sound* (*ṣawt*), which is more generic since obviously not all sounds are by convention: "expressions" would then be the subset of sounds that are indeed conventional. This repair actually finds its way into al-Ghazālī's version of the Aristotelian definition [T10]. But al-Fārābī had already dismissed this criticism on the grounds that there are natural "expressions," such as those made by animals [T3], and Avicenna introduces cases like the sound signifying trouble in the chest to make the same point. These are not just sounds but also expressions, so Aristotle was right to stipulate that a name is a *conventional* expression in order to rule out such cases.

It's interesting that Ibn Yaʿīsh gives, as another example of this phenomenon, a sound signifying that the person making the sound is asleep. This shows that such natural signification requires no explicit intention on the part of the speaker. By contrast the use of a conventional signifying expression would involve such an intention. This brings us to our second question, regarding the mechanism of signification on any given occasion of utterance. Avicenna is clear that there can be no signification of this sort unless the language-user intends to signify [T6, T7]. This would explain how it is that a homonym—the standard Arabic example is *ʿayn* which can mean among other things "coin," "eye," and "wellspring"—has one of its possible meanings rather than another on a given occasion. To give an illustration from English, if I tell you "get me the bat" it is my intention that you hand me a baseball bat and not a vampire bat that determines the meaning of the uttered sign "bat." Communication is successful when the listener gleans the intended meaning from the utterance, and one may argue that signification has really only occurred when there is such successful communication [T20].

Thus words do not signify things immediately, but only through the intermediary of an intention or concept formed in the soul or mind of the language user. (The term for "concept" is *maʿnā*, plural *maʿānī*; as Avicenna notes in [T8] it is ambiguous since *maʿānī* can also be used for the extramental, intended objects.) Thus we have a three-way interrelation between word, intention, and

thing, which is why we speak of a "semantic triangle."[2] Strictly speaking, according to Avicenna, the spoken word is actually signifying the mental intention and not the thing [T8]. This thesis is taken up emphatically by Abū l-Barakāt al-Baghdādī, who argues in its favor by pointing out that if I took a horse for a donkey I would signify it with the word "horse," and this word would successfully signify the object filtered through my mental representation of it as a donkey [T11]. Rāzī makes the same point with the example of mistaking a human for a rock, then a bird [T14]. Hardly a plausible scenario, admittedly, but it establishes the point that we can even move between entirely different genera when making mistakes in identification while still managing to signify. The intermediating role of concepts also explains how we can signify absent things, as when I use the name "Socrates" after his death. He may be gone but my mental representation of him is still available and this suffices to determine the meaning of the name [T12]. Again, it explains how two people can disagree about something's properties while both signifying successfully. The universe is obviously not both created and uncreated, but you and I can both refer to the same universe while imputing these contradictory properties to it because our representations are not the same [T15].

One can add a fourth level here, since linguistic signs can be written down too. In such a case, according to Avicenna, the written word signifies the thing still more indirectly, since the written sign signifies the verbal utterance which in turn signifies the concept [T8]. Typically for post-Avicennan philosophy this is expressed in terms of different levels of "existence (*wujūd*)" [T10, T14, T18], which connects this topic to the issue of mental existence. It turns out that the mentally existent thing is simply the thing in its guise as a concept, which is the immediate referent of a signifying expression. The relation between concepts and extramental individuals is the same for everyone, a point made by Aristotle (*On Interpretation* 16[a]) and still being echoed by Ṭūsī when he says that the relation between concept and thing is "natural and does not differ at all" [T18].[3]

Texts from: Aristotle, al-Fārābī, Avicenna, Bahmanyār, al-Ghazālī, Abū al-Barakāt al-Baghdādī, Fakhr al-Dīn al-Rāzī, Ibn Yaʿīsh, al-Khūnajī, Naṣīr al-Dīn al-Ṭūsī, Shihāb al-dīn al-Qarāfī, ʿAllāmā al-Hillī

2 This idea is also influential in Latin medieval philosophy, which looks back to Boethius for the semantic triangle theory. See T. Suto, *Boethius on Mind, Grammar and Logic: A Study of Boethius' Commentaries on Peri Hermeneias* (Leiden: 2012).

3 For more on the topic of this chapter see H. Eichner, "Das avicennische *Corpus Aristotelicum*: Zur Virtualisierung des Aristotelestextes in der postavicennischen Tradition," in R. Goulet (ed.), *Entre Orient et Occident: La philosophie et la science gréco-romaines dans le monde arabe* (Geneva: 2010), 197–239.

[T1] Aristotle, *On Interpretation*, 16ª19–29 [trans. Ackrill]

[***what is a name?***]

A name is a spoken sound significant by convention, without time, none of whose parts is significant in separation … I say "by convention" because no name is a name naturally but only when it has become a symbol. Even inarticulate noises (of beasts, for instance) do indeed reveal something, yet none of them is a name.

[T2] Al-Fārābī, *Sharḥ al-ʿIbāra*, vol. 2, 15.7–13 [trans. Zimmermann, mod.]

[***what is a name?***]

This is how Aristotle defines the name (*ism*): "It is an expression (*lafẓa*)[4] signifying by convention, free of time, none of whose parts signifies in separation". "Expression" is the genus of the name … [15.12] The definition of "expression" covers every expression signifying a single thought, regardless of whether the expression is simple or compound.

[T3] Al-Fārābī, *Sharḥ al-ʿIbāra*, vol. 2, 18.17–19.7 [trans. Zimmermann, mod.]

[***relation between "expression" and "sound"***]

Some of the commentators, indeed all of them, maintain that if the word "expression" is regarded as the genus of the name, this qualification [i.e. that it is "by convention"] is superfluous because the expression is only an expression by convention. To this one may reply: [it is true that] if we keep the words "by convention" in the definition of "name", not "expression" but "sound" would be the appropriate genus of "name". For sound may be natural or conventional, whereas expression can only be conventional. Yet we find in the *Book of Animals* that Aristotle says that many birds and other animals may produce sounds by means of things composed of letters.[5] And if an expression is composed of letters, the sound produced by these animals is an expression, even if these

4 This follows the Arabic translation by Isḥāq which has "expression" (*lafẓa*) instead of "sound" (*ṣawt*).

5 The editors refer to Aristotle, *History of Animals* 504ᵇ and *On Parts of Animals* 660ª29; the latter looks more likely to be the direct source.

are not letters which we know … [19.7] Those [sounds] are expressions, despite not being by convention. I suppose that he [Aristotle] added the condition "by convention" simply because of the expressions heard from these animals.

[T4] Avicenna, *Shifāʾ, Manṭiq, ʿIbāra*, 4.8–10 [trans. Bäck, mod.]

[***what is an expression?***]

By "the expression is signifying" is meant: when the name that is heard (*masmūʿ ism*) is inscribed upon the imagination (*khayāl*), the meaning (*maʿnā*) [of that name] is inscribed upon the soul. The soul learns that what is heard goes with this concept (*mafhūm*). Then, whenever the sensory perception (*ḥiss*) brings it to the soul, it attends to its meaning (*iltafat ilā maʿnāhu*).

[T5] Avicenna, *Shifāʾ, Manṭiq, ʿIbāra*, 7.4–5; 8.13–9.2; 9.6–10.5

[***relation between expression* (lafẓ) *and convention***]

[7.4] "The name (*ism*) is an expression[6] signifying by convention (*tawāṭuʾ*), free of time, none of whose parts signifies in separation."

[8.13] The addition of [the word] "convention" (*tawāṭuʾ*) after the word "expression" was supposed to be idle talk, since one might believe that no expression signifies except by convention. Likewise it was said that one should say "sound" instead of "expression". But I say this is wrong, for it is not expedient to employ "sound" here, since "sound" is a matter, not a genus; and matter is not predicated of something made up of matter and form, unless this is [said] figuratively or out of ignorance … But in real definitions, one must not use matters in place of the genera.

[9.6] An expression (*lafẓ*) may be significative or not significative … The latter comes about in two ways. The first is that it [the expression] is composed of letters yet it is not thereby intended to signify an impression in the soul, as when one utters [the nonsense word] *shanqanqatayn*. The second way is

6 There were different approaches to the translation of φωνή in the Aristotelian definition of the name; see Avicenna, *al-Shifāʾ, al-Manṭiq, al-ʿIbāra*, 8.13–10.5, and al-Fārābī, *Al-Farabi's Commentary and Short Treatise on Aristotle's De Interpretatione*, trans. F.W. Zimmermann (New York: 1981), lxxiv. These resulted in a discussion on whether a *lafẓ* always signifies. Avicenna's position (against al-Fārābī) is that *lafẓ* is an expression which might signify (if the speaker intends it to signify) but is not *per se* signifying.

that one does intend to signify an impression in the soul, but this impression is not based on anything external, as when we say "griffin" (*al-ʿanqāʾ*). The fact that an expression is not significative does not exclude it from being an expression. Likewise, the fact that an expression is significative, yet not by convention but rather in another way [does not exclude it from being an expression]. For sometimes one hears expressions from people, which signify meanings not by way of convention, as when someone says *akh* and thus signifies pain, or when someone says *aḥaḥ* when he is coughing an thus signifies trouble in the chest. This is not by way of sheer convention, as if people had introduced a convention to use this [expression, namely *aḥaḥ*] when coughing, so as to convey the meaning of trouble in the chest. These may be sounds, but they are also expressions, because they are composed of letters by a human, and because even though they do not signify by convention, the fact that they do not signify by convention does not [10] deprive them of being expressions. Even if they did not signify at all, they would still be expressions because they are arbitrarily composed of letters. It is not their signification, inasmuch as a sound is in them, that prevents them from being an expression, for something is an expression precisely because it is composed of letters separately articulated by sounds. Its being like this [i.e. that it is composed of letters] does not additionally imply that it be significative or not significative, much less imply that it is not significative as a signification by nature.

[T6] Avicenna, *Shifāʾ, Manṭiq, Madkhal*, 25.9–26.2

[***simple expressions***]

The description of simple expressions which can be found in previous teaching is the following: they are those whose parts do not signify anything.

One group of theoreticians (*ahl al-naẓar*) found this description inadequate, and deemed it necessary to make the following addition: they [simple expressions] are those whose parts do not signify anything of the meaning of the whole (*al-kull*); for the parts of simple expressions may signify meanings but these are not parts of the meanings of the totality (*al-jumla*).

My own view is that whoever makes this charge of inadequacy against [the older description] is being inattentive, and that this addition is not required for the sake of completeness, only for elucidation.

[***who or what is signifying, the expression or the speaker?***]

For in and of itself (*bi-nafsihi*), an expression does not signify at all. Otherwise every expression would have an unsurpassable claim to meaning. Rather it sig-

nifies only due to the intention of the speaker, just as the speaker employs it to signify a certain meaning, as when he uses *ʿayn* for a spring of water so that this is its signification, and then uses it to signify a different meaning, as when *ʿayn* [signifies] *dīnār*, so that this is its signification. Likewise, if the speaker in employing it were to deprive it of signification, it would not signify. In the view of many theoreticians this is not [26] an expression. For a letter or a sound, I suppose, are according to the agreement of many logicians not an expression, unless they include signification.

[T7] Avicenna, *Manṭīq al-mashriqiyyin*, 11.10–11

[***speaker intention***]

If one does not intend any signification with the expression, it is not signifying. For the meaning of "an expression is signifying" is that one intends to signify through it, not that it has in itself the right to signify.

[T8] Avicenna, *Shifāʾ, Manṭiq, ʿIbāra*, 2.15–3.3 [trans. Bäck, mod.]

[***the semantic triangle***]

[1.6] On the knowledge of the interrelations between things (*umūr*) and concepts (*taṣawwurāt*) and verbal expressions (*alfāẓ*) and written (ones) (*kitābāt*) …

[2.15] So what is expressed by voice signifies what is in the soul, namely, what are called traces. What is in the soul signifies things and is called *maʿānī*, that is, the intentions for the soul, just as traces in comparison to expressions also are *maʿānī*. The written [expressions] signify the verbal expressions since the composition of expressions is paralleled by them.

[T9] Bahmanyār, *Taḥṣīl*, 39.15, 40.14–5, 38.8–16

[***names and signification***]

[39.15] The name is a simple expression signifying a meaning without signifying time …[7]

7 Same wording at al-Sāwī, *Baṣāʾir an-naṣīriyya*, 96.9.

[40.14] No name is a name for something by nature. Rather it becomes a name when it is set down as a name (*iḏā juʿila isman*). This is what is intended by "signification" (*dalāla*) …

[***semantic triangle***]

[38.8] There are objects (*umūr*) that exist in concrete individuals and objects that exist in the soul, which are traces (*āthār*) of those things that exist in concrete individuals … [38.14] Verbal expressions refer to (*ḥikāya*) the trace that is in the soul, and this can happen only by convention (*bi-tawāṭuʾ*) and imposition (*waḍʿ*), since none of the names were specified for any object by nature. The written (*kitāba*) [expression] refers to this impression.

[T10] al-Ghazālī, *Miʿyār al-ʿilm fī fann al-manṭiq*, 79.7–8; 75.15–21

[***definition of name***]

The name (*ism*) is a sound (*ṣawt*) signifying by convention, free of time, none of whose parts signifies in separation.

[***levels of existence***]

[75.15] You should know that the levels [of existence] we have in mind here are four, among which the verbal expression is on the third level: something exists in concrete individuals, then in minds, then in verbal expressions, then in written [expressions]. For the written [expression] signifies the verbal expression, the verbal expression signifies the notion in the soul, and what is in the soul is a likeness (*mithāl*) of that which exists in concrete individuals.

[T11] Abū l-Barakāt, *Muʿtabar*, vol. 1, 8.6–7; 12.9–15

[***who or what signifies?***]

[8.6] Each expression that passes between human beings in their exchanges and conversations has a meaning in the mind of the one who speaks it, who signifies [the meaning] by [the expression]; and it is understood in the mind of the one who hears it, who derives [the meaning] from [the expression].

[***what is signified?***]

[12.9] Upon initial reflection, someone might not be aware of the difference between concepts in his mind and existing individuals. It is for this reason that the names he has for them [i.e. concepts and concrete particulars alike], are

ambiguous [since they signify concepts and existent things simultaneously]. They are signified by expressions in the same way, so that one calls an imagination (*khayāl*) of Zayd "Zayd," and an image (*ṣūra*) of a human being "human being." But the names for each named thing are really only names for the mental concepts. It is by means of them [the concepts] that they are for him [the speaker] names for the [concretely] existing things. Thus when someone sees a horse from a distance, but he does not get this right and doesn't accurately form an image of it in his mind, instead mistaking it for a donkey, he would have named it according to what he conceptualized in his mind and not according to the name the thing actually has.

[T12] Abū l-Barakāt, *Muʿtabar*, vol. 1, 34.16–22

[*semantic triangle*]

We have already stated that things that exist among concrete individuals have forms (*ṣuwar*) in the mind, as if they were likenesses and appearances (*ashbāḥ*), which the human being contemplates in his mind while not contemplating existing concrete particulars. Expressions signify these [forms] primarily. Only by means of these [forms] and secondarily do expressions signify existing concrete particulars, like the notion of horse or of human being, or even the notion of Zayd and ʿAmr: when someone mentions the expression for it, the notion of it represented in the mind.

Even if the relevant existing concrete particular is not present, the observer contemplates it, so that when the concrete particular that has been established as the model and form of [the mental representation] is indeed present, one may say: this is that. Were it otherwise, if somebody saw a person who then disappears, there would be no way for him to know, when observing him a second time, that this [is the same person who was] seen the first time, and there would be no difference between the first and second and second time of observation.[8]

[T13] Al-Rāzī, *Maḥṣūl, Fiqh*, vol. 1, 179.13–4

[*definition of "word"*]

We say: each articulated thing that signifies a meaning by convention is a word (*kalima*).

8 Cf. also Abū l-Barakāt, *Muʿtabar*, vol. 2, 394–395.

[T14] Al-Rāzī, *Sharḥ al-Ishārāt*, vol. 1, 21.5–15

[***levels of existence***]

Things have four levels of existence: external, mental, expressed in speech (*lafẓī*), and written. The written one signifies the [spoken] expression … [21.9] The [spoken] expression does not signify external [existence], as is shown by the fact that when you see a human being from a distance and mistake him for a rock, then you call him by this [name, i.e. "rock"]. When you then approach him and recognize his animality, but mistake him for a bird, you call him "bird". Then when you get even closer and recognize his humanity, you call him "human being". The fact that what we call things differs along with what is being imagined (*khayālāt*) shows that names signify mental forms, not extramental things. People are accustomed to call the mental forms "meanings" (*maʿānī*). It has become clear now that he [Avicenna] is right to say that "there is a certain dependence between the expression and the meaning," that is, in itself and primarily the expression signifies only the mental forms.[9]

[T15] Al-Rāzī, *al-Tafsīr al-kabīr*, vol. 1, 31.8–11

[***what is signified***]

The second [indication that expressions only signify mental forms] is: if an expression did signify extramental things, then whenever one person says "the world is eternal" and another says "the world is created" the world would have to be eternal and created at the same time, which is absurd. By contrast, when we say that they signify meanings in the mind (*al-maʿānī al-dhihnī*), the two statements signify these two judgments being made by these two people, which involves no contradiction.

[T16] Ibn Yaʿīsh, *Sharḥ al-Mufaṣṣal*, vol. 1, 71.11–15

[***natural expressions***]

Among them [expressions] are those that may signify a meaning by nature (*ṭabʿ*), not by imposition (*waḍʿ*). For example when a sleeping person says *akh*, one thereby understands that he is immersed in sleep; and likewise when he says *aḥ* when coughing, one understands from it trouble in the chest. These are

9 Similar passages at al-Rāzī, *Maḥṣūl, Fiqh*, vol. 1, 200.11–201.2 and al-Rāzī, *al-Tafsīr al-kabīr*, vol. 1, 31.5–8. See also al-Ṭūsī, *Sharḥ al-Ishārāt*, 131.1–3.

expressions because they are composed of articulated letters, but they are not called "words (*kalim*)" since their significations do not occur by agreement and convention.

[T17] Al-Khūnajī, *Kashf Al-Asrār*, 14.15–15.3

[*definition of "expression"*]

The simple expression is either the name, the verb, or the particle (*adā*). The Shaykh defined the name as "an expression signifying by convention a meaning, free of time, none of whose parts signifies in separation" … [15.1] "Expression" here excludes all that signifies while not being an expression, for example gestures, actions, movements, and sound that is not an expression.

[T18] Al-Ṭūsī, *Sharḥ al-Ishārāt*, vol. 1, 131.1–6

[*levels of existence*]

I say that things exist in concrete individuals, in minds, in the verbal expression (*ʿibāra*), and in the written expression. The written expression signifies the verbal expression, which signifies the mental notion (*maʿnā*), and both significations are based on imposition and differ according to the impositions. [By contrast] the signification of the external thing by the mental notion is natural and does not differ at all. There is a non-natural relation between the expression and the notion, which is why [Avicenna] said "a certain relation," since the real relation is the one between the notion and the thing.

[T19] Al-Qarāfī, *Sharḥ Tanqīḥ al-fuṣūl*, 25.21–5

[*definition of "signification"*]

"Signification of an expression" is the listener's understanding from the speech of the speaker either all that is named, part of it, or something implied by it (*lāzim*).

Avicenna refers to two opinions: the first is this one, while the other one would have it that [signification] is such that whenever the expression is uttered (*iḏā uṭliqa*), it signifies.[10]

10 See also al-Iṣfahānī, *al-Kāshif ʿan al-Maḥṣūl*, vol. 2, 3, and Badr al-dīn Muḥammad al-

[T20] Al-Qarāfī, *Nafā'is al-uṣūl*, vol. 2, 543.19–544.2; 544.10–12; 545.10–13

[*defining "signification"*]

Later scholars preferred the first definition, inferring the correctness of their view from the following: [544] whenever the expression circulates between the partners in a conversation, and the listener understands something from it, then one says this is a signifying expression, whereas if he does not, one says that it is not signifying.

[544.10] The adherent of the other opinion argues that "signification" is an attribute of "expression," since one speaks of "signifying expression." The first group thought that the reason for this is that "signification" is an attribute of the listener, given that "understanding" is an attribute of the listener, but this explanation is certainly false.

[545.10] You should know that one can avoid adopting the opinions of either group by saying: "signification of the expression" means giving the listener to understand (*ifhāmihī al-sāmiʿ*) … "Giving to understand" (*ifhām*) is the attribute of the expression, while the understanding is its effect, and this is the attribute of the listener.

[T21] Al-Hillī, *Qawā'id*, 195.1–9

[*defining "signification"*]

What is intended by "signification" is understanding the meaning from the expression upon its utterance (*ʿinda iṭlāqihī*), or imagining it [the meaning] through a relation to someone who knows its imposition. The Master says in the *Healing* that what is intended by "signification" is: "when the name that is heard (*masmūʿ ism*) is inscribed upon the imagination (*khayāl*), the meaning (*maʿnā*) [of that name] is inscribed upon the soul. The soul learns that what is heard goes with this concept (*mafhūm*). And whenever sensory perception (*ḥiss*) brings it to the soul, [the soul] attends to its meaning." You should know that the expression may sometimes signify according to nature, as *aḥ* signifies trouble in the chest, or may do so according to reason, as the sound signifies the one who makes the sound, or may do so according to imposition.[11]

Zarkashī, *al-Baḥr al-Muḥīṭ fī uṣūl al-fiqh*, ed. by ʿAbd al-Qādir ʿAbd Allāh ʿĀnī (Kuwait: 1992), vol. 2, 36 and following.

11 Similar: al-Ḥillī, *al-Jawhar al-naḍīd*, 8.5–7.

CHAPTER 4

Signification

One of the most fundamental topics in the philosophy of language is signification (Arabic *dalāla*), that is, the ability of terms to "refer" (*dalla*). In antiquity, as in Plato's *Cratylus*, there was a prominent debate as to whether signification occurs naturally or by imposition. If the former were the case, then we could perhaps "read off" the nature of referents by looking at features of language, or even components of words. Thus Plato suggests that the sound represented by the Greek letter *rho* naturally signifies motion, which is why the word *rhein* (flowing) starts with this letter (*Cratylus* 426c–d). But this sort of naturalism plays little or no role in post-Avicennan philosophy, since Avicenna is fully committed to Aristotelian conventionalism. Words, whether written or spoken [T8], have their meanings thanks to arbitrary imposition, apart from occasional exceptions like onomatopoeia, a point made by al-Ḥillī at [T28].

This does not mean, though, that all words signify in the same way. To the contrary, Avicenna recognizes three ways of signifying, which he calls congruence (*muṭābaqa*), containment (*taḍammun*), and implication (*luzūm*) [T1, T2], followed by Bahmanyār [T6]. In the case of congruence, the expression exactly matches what is signified, as "human" signifies humans or, more technically, whatever is picked out by the definition of "human," namely rational animal. We speak of containment when an expression is taken to signify only part of that whole meaning, as "human" signifies just animal. Finally, signification by implication involves, as Bahmanyār puts it [T7], a "transfer of the mind" from the core meaning of the expression to an associated idea, as speaking of "roof" calls to mind walls or a foundation, without which there could not be a roof. As usual, Abū l-Barakāt suggests a different way of thinking about it, since in his view containment is also a kind of implication, but of something internal to the core meaning as opposed to something external that follows from it [T11]. Broadly speaking, though, authors in our period accepted the threefold division and were happy to work with it, even applying it in fields outside of philosophy, as we shall see.

But that doesn't mean there were no problems for them to discuss. Several tweaks were introduced to the characterization of the three ways of signifying. Fakhr al-Dīn said that terms are signified by containment as parts of the overall meaning of the expression, but *just insofar as* they are parts [T12]. The worry here, also discussed at [T17], is that we need to exclude signification by homonymy, as for instance "possible (*mumkin*)" can signify just the specifically

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contingent (what is neither necessary nor impossible), or the generally possible (whatever is not impossible) where the former is a part of the latter. Al-Abharī and al-Kātibī expand this even to congruence [T23, T25]. To use the standard example, we should not say without qualification that the Arabic word *ʿayn* signifies the eye by congruence, because it can also signify a source of water. A further warning is introduced by Ibn Kammūnā: we should not confuse signification by containment with the idea that a more general expression signifies something more specific [T26]. For instance, "human" signifies animal because this is part of the nature of human, but the reverse is not the case. Thus every expression for a species signifies by containment both the genus and specific difference of that species [T14], whereas the expression for a genus does not signify the species that falls under that genus.

One reason Avicenna and our later authors are so interested in signification is that we need to keep careful track of it when doing science.[1] This is something we already see in al-Fārābī, who warns against the mistake of using in demonstrations a term like "human animal." This would be redundant, since "human" already signifies animal by containment.[2] A more fundamental methodological concern is raised by Avicenna at [T3, T4, T5], namely that signification by implication should not be employed in science. This is because whatever is implied by an expression lies outside its quiddity, and in science we are only interested in quiddities. Here it would be useful to note the ambiguity of the word used for "implication," namely *luzūm*. In a narrow, technical sense, that which is *lāzim* ("implied") can refer to necessary concomitants. For example "having 180 degrees of internal angles" necessarily belongs to triangle, so this property is among the *lawāzim* of triangle. This is the sense of the word *luzūm* that appears most frequently in the rest of the present volume. More broadly, and in the sense relevant in this chapter, an "implication" can be anything that comes naturally to mind when an expression is heard. This could be because two things have an extramental causal relationship, like "wall" and "roof," or even just an accidental association, like "enjoys cheese" and "Frenchman." It seems intuitive that these should have no place in science, whereas *lawāzim* in the narrower sense certainly do. In [T24] al-Ṭūsī seems to recognize this ambiguity when he suggests that some implications might be retained in science.

Our authors duly consider the exact rationale that led Avicenna to exclude implications from science. One idea, proposed by al-Sāwī [T9], is that imme-

1 See further R. Strobino, *"Per Se*, Inseparability, Containment and Implication. Bridging the Gap between Avicenna's Theory of Demonstration and Logic of the Predicables," *Oriens* 44 (2016), 181–266.

2 See al-Fārābī, *Commentary on On Interpretation*, in M.T. Dāneshpažūh (ed.), *al-Manṭiqiyyāt li-l-Fārābī* (Qom: 1988), vol. 2, 175.15–21.

diately implied concepts would have further implications, which have then further implications, leading to a regress: roof implies wall, wall implies foundation, foundation implies earth, earth implies cold, cold implies ice cream, etc. But Fakhr al-Dīn rejects this explanation, on the grounds that we could stop the regress by simply limiting ourselves to the "obvious" implications [T16]. Instead, he says that the problem is that this limitation would be vague. Some people might find it obvious that roof implies foundation, others not; presumably no one finds themselves thinking of ice cream when hearing "roof," but you never know. Interesting here is his point that we need to consider what is uniformly *communicated* by an expression, in other words, what meanings would reliably be understood by anyone who hears the expression. This close link between signification and successful communication is also thematized at [T11, T27].

This is arguably also the intuition behind al-Ghazālī's explanation for the exclusion of implications, namely that they simply were not intended by the "name giver" who first imposed the expression for a given meaning [T10]. Similarly al-Āmidī [T18] and Ibn al-Ḥajib [T20] say that unlike congruence and containment, implication is not "verbal" or "linguistic" signification. Even if the word "roof" calls walls to mind, this is not part of what the *word* signifies. Rather, the signification results only from an operation of the mind, as also noted by al-Khūnajī [T19]. Along the same lines, Fakhr al-Dīn distinguishes between signification that is "by imposition" and that is "by reason (*ʿaqlī*)" [T12, T15]. However, he classifies even signification by containment, not just signification by implication, as being "by reason." This is because a mental operation is needed to get to the part of a meaning. For instance when animal is signified by "human," this isn't part of the imposed meaning of the expression.

The influence of Avicenna's scheme is shown by the fact that it was deployed beyond logic and philosophy of language. We see this even in Fakhr al-Dīn, who suggests that the three modes of signification belong to a grammatical theory that spans across all natural languages [T13]. But the most striking illustration comes in juridical authors, who use Avicenna's distinction to discuss various kinds of legal reasoning. The argument *e contrario* (for example: from "tax is owed on free-grazing sheep" we infer that no tax is owed on stall-fed sheep) is stated not to be any one of the three modes of signification [T21].[3] By contrast, reasoning by analogy (as when, from "date wine is forbidden" we infer that grape wine is forbidden) is a case of signification by implication [T22]. And, in

3 For this form of argument in relation to Avicenna's account of signification see N. Kalbarczyk, "In the Footsteps of Avicenna? The Uṣūlī Debate on the *Argumentum e contrario*," in P. Adamson (ed.), *Philosophy and Jurisprudence in the Islamic World* (Berlin: 2019), 53–65, and for

an echo of Fakhr al-Dīn's point about the varied effects of this sort of signification from person to person, we are told that this need not mean that the mind *inevitably* turns to what is implied, just that it *can* [T29].

Texts from: Avicenna, Bahmanyār, al-Sāwī, al-Ghazālī, Abū l-Barakāt al-Baghdādī, Fakhr al-Dīn al-Rāzī, al-Āmidī, al-Khūnajī, Ibn al-Ḥājib, Tāj al-Dīn al-Urmawī, al-Bayḍāwī, al-Abharī, al-Ṭūsī, al-Kātibī, Ibn Kammūna, al-Qarāfī, al-Ḥillī, Shams al-Dīn al-Iṣfahānī

[T1] Avicenna, *Shifāʾ, Manṭiq, Madkhal*, 42.15–43.15

[*the three types of signification*]

You know that whenever the expression "moved" signifies, there must be a mover; and whenever the expression "roof" signifies, there must be a foundation. But we do not say that what is understood and signified by the expression "moved" is the mover, or that what is understood and signified by the expression "roof" is the foundation. This is because the meaning of "signification of an expression" is that the expression is a name (*ism*) for this meaning, according to [43] primary intention. And if there is a further meaning associated with this meaning in an extrinsic way, with the mind becoming aware of this other meaning simultaneously as it becomes aware of that first meaning, then the expression does not signify this [extrinsic meaning] primarily. [...] [43.5] The meaning given to "signification (*dalāla*)" is also twofold; one is primary, the other secondary. The primary one is like when we say "animal," for it signifies [primarily] the whole of "sensitive body having a soul." The secondary one is like the way ["animal"] signifies body [alone], since the meaning of "body" is necessarily included (*muḍammanun*) in the meaning of animality. For whatever signifies animality embraces the meaning of body, and not in such a way that it would indicate it extrinsically. [...] [43.12] If we wish to condense and summarize all this, we would assume the signification of expressions to occur in three ways: (a) signification by congruence (*dalālat muṭābaqa*), as "animal" signifies the whole of "sensitive body having a soul"; (b) signification by containment (*dalālat taḍammun*), like the expression "animal" signifies body; and (c) signification by implication (*dalālat luzūm*), like "roof" signifies the foundation.

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connections between the account and legal thought more generally, N. Kalbarczyk, *Sprachphilosophie in der islamischen Rechtstheorie. Die avicennische Klassifikation der Bezeichnung bei Fakhr ad-dīn ar-Rāzī* (Leiden: 2018).

[T2] Avicenna, *Manṭiq al-Mashriqiyyīn,* 14.16–15.6

[*the three types of signification*]

The types of signification for an expression are three: signification by congruence, by containment, and by implication (*iltizām*), the latter being a transition by way of the meaning (*wa-huwa al-naql min ṭarīq al-maʿnā*). Signification by congruence is like the way the expression "human" signifies rational animal. Signification by containment is like the way "human" signifies animal and rational, for each of these two is a part of what "human" signifies by congruence. Signification by implication is like the way "created" signifies creator, "father" signifies son, "roof" signifies wall, and "human" signifies "capable of laughter." For [the expression] primarily (*awwalan*) signifies, with signification by congruence, the meaning that it [15] signifies in the first instance (*awwalan*). This meaning is then accompanied by another one, so that the mind also makes a transition to that second meaning, which is associated with the first meaning and accompanies it. Signification by congruence and signification by containment have in common that neither of them is a signification of something external to the thing [signified]. Signification by containment and signification by implication have in common that each of them depends on the primary signification.

[T3] Avicenna, *Ishārāt,* 53.5–10

[*on signification by implication*]

When we say "such-and-such an expression signifies such-and-such," we mean by this the way of congruence or of containment, not the way of implication. How could it be otherwise, since what is signified by way of implication (*bi-ṭarīq al-iltizām*) is without limit (*ghayr maḥdūd*)? Moreover, if what is signified by way of implication were intended, then something non-constitutive would be suitable to signify the "what it is," like "capable of laughter," which signifies rational animal by way of implication. But it is unanimously agreed that this sort of thing is unsuitable in reply to the question "what is it?"

[T4] Avicenna, *Shifāʾ, Manṭiq, Burhān,* 150.6–8 [trans. Strobino, mod.]

[*implication*]

Things are necessary in two ways: in implication (*fī l-luzūm*), without being necessary to one another in substance and nature—these are extrinsic implic-

ates (*lawāzim khārija*), and we have explained earlier that they are not useful to obtain certain knowledge—and necessary in substance and nature, that is, things that are essential (*bi-dhātihā*).

[T5] Avicenna, *Shifāʾ, Ilāhiyyāt*, 177.13–17

[*implication*]

We also say that the genus is predicated of the species in such a manner that it is a part of its quiddity, whereas it is predicated of the specific difference in such a manner that it is an implicate (*lāzim*) of it, not in such a manner that it is a part of its quiddity. For example "animal" is predicated of "human" in such a way that it is a part of its quiddity, but predicated of "rational" in such a manner that it is an implicate of it, not in such a manner that it is a part of its quiddity. By "rational (*nāṭiq*)" we mean something that has rationality (*nuṭq*) and something that has a rational soul. But our saying "rational" does not by itself show whether that thing is a substance or not a substance; yet it is necessarily *implied* that this thing can be nothing but a substance, a body, and sensitive. These things are said of it [sc. "rational"] in the way that something implied (*lāzim*) is said of that which necessarily implies [it]; for they [i.e. substance, body, and sensitive] are not intrinsic to that which is understood by "rational," that is, something that has rationality.

[T6] Bahmanyār, *Taḥṣīl*, 13.3–6

[***threefold classification with relations between logical predicables***]

There are three ways an expression signifies a meaning: the *first* is called congruence (*muṭābaqa*), as "animal" signifies the species below it. The *second* one is by means of containment, as "house" signifies wall and its definition, and as the species signifies the genus. The *third* is signification by implication, as "roof" signifies wall and as the specific difference signifies the genus.

[T7] Bahmanyār, *Taḥṣīl*, 16.9–15

[***signification and implication***]

We say: in reply to [the question] "what is it?" anything is suitable that expresses the state of commonality (*sharika*), but not the state of a single [shared ele-

ment] (*infirād*), for example "animality" for "human" and "horse," but not "sensitive" (*ḥassās*) for "human" and "horse." This is because "sensitive" does not signify the whole quiddity that human and horse have in common, given that, even if "sensitive" signifies some essential meaning, namely the fact that something has sensation (*ḥiss*), by way of congruence, it signifies the further thing that *has* sensation [only] by way of implication, not by way of containment. The difference between implication and containment is this: the roof implies the wall, and does not contain it, whereas the house both implies the wall and contains it. The meaning of "implication (*iltizām*)" is that one gets to know something external by way of transferring the mind to it.

[T8] Bahmanyār, *Taḥṣīl*, 39.1–5

[***written, verbal, and mental significantion***]

It is correct that the written and verbal expressions differ [from person to person], because they are natural for what is in the soul, but are due to imposition (*waḍʿ*). As for the trace (*athar*) that is in the soul, it does refer naturally to things in extramental reality. Written [expressions] are posited significations (*dalālat waḍʿiyya*) that differ according to the impositions of the letters used in discourse (*ḥurūf al-kalām*). Verbal expressions are posited significations that differ according to the impositions for the conceptions (*taṣawwurāt*) of the soul. The conceptions of the soul are an instinctive (*gharīziyya*) signification for extramental things.

[T9] Al-Sāwī, *Baṣā'ir, Manṭiq*, 33.5–8; 33.17–20

[***studying meanings by studying expressions***]

It has already been shown that the logician examines meanings. But if he confines himself to the investigation of expressions, their states and their divisions—given that he really has to examine these, because of [the relation] between an expression and a meaning—then this will spare him from having to start over with getting to know the states and divisions of meanings. For the expressions parallel the meanings. We say, then, that an expression signifies a meaning in three ways. [...][4]

4 There follows the standard list of three ways with the familiar examples of human and house.

[*implication is not used in science*]

[33.17] It is as if [implication] were not a verbal signification; rather, the mind is transferred from one meaning, which the expression signifies by imposition, to another meaning which is associated with it and proximate to it. In the sciences, signification by congruence and by containment can be used, but not signification by implication, because it is unrestricted, since the implicates (*lawāzim*) may have further implicates, and so on without end.

[T10] Al-Ghazālī, *Miʿyār al-ʿilm*, 72.6–19

[*threefold classification of signification*]

We say: expressions signify their meanings in three different ways. *The first way* is signification with regard to congruence, as a name is posited for the thing, for instance as the expression "wall" for the wall. *The second way* is by way of containment, as the expression "house" signifies the wall, and the expression "human" signifies animal. And likewise as every maximally specific attribute (*waṣf akhaṣṣ*) signifies the most general substantial (*jawharī*) attribute. *The third way* is the signification by way of implication and following, as the expression "roof" signifies the wall, because it follows from it […].[5]

[*signification in definitions*]

[72.15] In definitions (*taʿrīfāt*) we [only] consider signification by congruence and by containment. Signification by implication is not considered, since it has not been laid down by the giver of language, unlike the other two. For what is signified by [implication] is unlimited and unrestricted, given that the implicates of things and the implicates of their implicates are unregulated and unrestricted. So this would lead to the result that the expression signifies an infinity of meanings, which is absurd.

[T11] Abū l-Barakāt, *Muʿtabar*, vol. 1, 8.7–18[6]

[*the threefold classification in terms of communication*]

(a) The expression may signify for the hearer the meaning intended by the speaker, as when he understands "rational animal" from the expression

5 Similar are al-Ghazālī, *al-Mustaṣfā*, vol. 1, 92.8–93.8 and al-Ghazālī, *Kitāb Miḥakk an-naẓar*, 73.6–74.1.

6 For the immediate context see the first paragraph of T11 in our chapter on the Semantic Triangle.

"human"; this is called "signification by congruence." (b) Or [the expression] may signify a meaning that is contained in it and [part] of its totality, as the expression "human" signifies animal or rational; for in signifying [human] is signification of each of these two; this is called signification by containment. (c) And one may understood from [the expression] a meaning which is not the intended meaning, and which is not [part] of its totality, yet is an implicate of it and inseparably connected to it. This is called signification by implication, as the expression "moved" signifies the meaning of mover, and "roof" signifies wall; for moved cannot be separated from mover, even though it is not itself the mover, and what is understood by "mover" is no part of what is understood by ["moved"]; nor can the roof be separated from the wall, even though it is neither the wall nor part of the wall.

[***alternative way of classifying***]

It would also be right to make there be just two kinds of signification: first congruence, and then the other two would both be placed under implication, one of them in a more proper sense, namely containment, the other signification by "implication" in the sense of following. For the part is understood as implying understanding of the whole.

[T12] Al-Rāzī, *Maḥṣūl, Fiqh*, vol. 1, 219.5–220.8

[***threefold classification***]

The signification of an expression may be considered either in relation to the entirety of what it names (*tamām musammāhu*); or in relation to what falls within the meaning, insofar as it is such; or in relation to what falls outside the meaning, insofar as it is such. The first is congruence, the second containment, and the third implication.

Remarks. *First*: signification based on imposition (*dalāla waḍʿiyya*) is signification by congruence. The other two [significations] are based on reason (*ʿaqliyya*), since when an expression is imposed for a notion (*musammā*), the mind turns from the meaning to what is impicated (*lāzim*) by it. If its implicate falls within the meaning, it is a case of containment, if outside, then implication (*iltizām*). [220] *Second*: we said regarding containment that it is the signification of the expression of a part of the meaning, "insofar as it is such," as a precaution against the expression signifying a part of the meaning by congruence but only in a homonymous manner. And likewise for what we said about implication. *Third*: with regard to signification by implication, external implic-

ation (*al-luzūm al-khārijī*) is not considered. For substance and accident are mutually implicating, yet the expression used for one of them is not applied to the other. On the other hand, in the case of two opposites that exclude each other (*ḍiddāni mutanāfiyāni*), an expression that signifies one may be used for the other, like God's statement: "let harm be requited by an equal harm" (Qur'ān 42:40). But [in such a case] it is obviously mental implication that is being considered. Furthermore, this implication is [only] a necessary condition, not a sufficient condition (*sharṭ*, *lā mūjib*).

[T13] Al-Rāzī, *Sharḥ al-Ishārāt*, vol. 1, 22.8–12

[***connection to grammar***]

[*Avicenna*] *said*: "[it is indispensable for the logician to consider the aspect of the absolute expression], insofar as it is not restricted to the language of a certain group of people, except in rare cases." This means that inquiry into languages can be based on reason (*ʿaqlī*), as when we say that significative expressions are name, verb, or particle, and that they signify by congruence, containment, or implication; for these are general inquiries into all languages. Or it can be a specific inquiry into the language of just one people, without considering another one. The first is what logician must deal with, the second falls outside logic.

[T14] Al-Rāzī, *Sharḥ al-Ishārāt,* vol. 1, 88.14–16

[***correlation of signification to logical notions***]

It has been shown that the expression that signifies the true reality (*ḥaqīqa*) signifies the genus and specific difference by containment, whereas the expression that signifies the specific difference signifies the genus only by implication.

[T15] Al-Rāzī, *Nihāyat al-ījāz*, 87.3–88.8

[***signification by imposition and by reason, cf. T12***]

[Signification] is either based on imposition (*waḍʿiyya*) or on reason (*ʿaqliyya*). That based on imposition is the signification of expressions for the meanings they were posited for, like the way "stone," "wall," "sky," and "earth" signify what they name. There can be no doubt that this is based on imposition—otherwise it would impossible for their significations to differ according to their differ-

ent impositions. That based on reason is either when [what is signified] enters into what is understood (*mafhūm*) by the expression, as "house" signifies roof, which is a part of what is understood by "house"—there can be no doubt that this is based on reason, since it would be impossible for an expression to be posited for a composite true reality (*ḥaqīqa*) without including [88] its parts—or when [what is signified] lies outside [what is understood by the expression], as the expression "roof" signifies "wall." Since it is usually impossible for the roof to be separate from wall, the expression that conveys the true reality of roof [also] conveys wall, by means of its signification of the former [i.e. roof]. Therefore this is also a signification based on reason.[7] The master [ʿAbd al-Qāhir al-Jurjānī] states, concerning what we were just talking about: there is a brief explanation (*ʿibāra mukhtaṣara*) here, namely to [distinguish between] the meaning (*al-maʿnā*) and the meaning of the meaning (*maʿnā l-maʿnā*). The "meaning" is what is understood from the surface expression (*ẓāhir al-lafẓ*), that is, is understood from it immediately. The "meaning of the meaning" is: once the meaning is understood from the expression, then this meaning conveys another meaning.[8]

[T16] Al-Rāzī, *Manṭiq al-Mulakhkhaṣ*, 20.15–21.5

[*why signification by implication should not be used in science*]

The signification by implication is to be renounced in the sciences, not because it is said to be based on reason (*ʿaqliyya*); otherwise [21] this would be refuted by the case of containment [which is also said to be based on reason]. Nor because the implications are infinite, since the obvious ones (*al-bayyina minhā*) are finite. Rather it is because if the expression's signification of the implication is considered to be obvious, then this would be something that differs from one person to another. Accordingly what is signified would not be precise. If on the other hand it is not considered [obvious], this would be absurd (*muḥāl*), since the purpose of pronouncing the expression is to let [other people] understand the meanings (*ifhām al-maʿānī*). If this doesn't happen, then the expression is of no use (*lam yakun al-lafẓ mufīdan*).

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7 Similar at Fakhr al-Dīn al-Rāzī, *Sharḥ al-Ishārāt*, vol. 1, 33.10–11. For other passages designating congruence as "by imposition" and containment and implication as "by reason," see al-Ṭūsī, *Sharḥ al-Ishārāt*, vol. 1, 139; and al-Iṣfahānī, *al-Kāshif ʿan al-Maḥṣūl*, vol. 2, 7.9–15.

8 Equivalent (with minor differences) to ʿAbd al-Qāhir al-Jurjānī, *Dalāʾil al-iʿjāz*, 262, last line—263.3.

[T17] Al-Rāzī, *Sharḥ al-Ishārāt*, vol. 1, 32.12–33.3

[***signification of part of a meaning***]

You should know: it might be supposed that, whenever an expression signifies a meaning, then somehow, it signifies a part of that meaning by containment. But this is false. For it could be that the expression signifies [both] the meaning and its part by congruence, in a homonymous manner. For instance the case of "possible" (*al-mumkin*), since it signifies both the specific possible (*al-mumkin al-khāṣṣ*) and the general possible (*al-mumkin al-ʿāmmī*), which is part of what is understood by the specific possible, so that it signifies both of them homonymously (*ishtirāk al-ism*).[9] Rather, the condition for signification by containment is that the expression signifies [32] a part of the meaning not primarily and in itself, but secondarily and accidentally. With [signification by containment] we mean that [the expression] signifies the part as a consequence (*tabiʿan*) due to its signifying the whole (*li-dalālatihi ʿalā l-kull*), as the expression "triangle" signifies figure, since "triangle" does not signify figure in itself, but [figure] is signified because it is included under triangle (*li-indirājihī taḥta l-muthallath*).[10]

[T18] Al-Āmidī, *Iḥkām*, vol. 1, 32.4–16

[***"verbal" vs "non-verbal" signification***]

About the parts of its signification: its signification is either (a) verbal (*lafẓiyya*) or (b) non-verbal. (a) "Verbal" means that [signification] is considered in relation to (a1) the whole meaning, or (a2) part of the meaning, for which the expression has been imposed. (a1) The first case is signification by congruence, as the expression "human" signifies its meaning. (a2) The second case signification by containment, as expression "human" signifies what is in its meaning, like animal and rational. Congruence is more general than containment, since what is signified can be simple, with no parts. (b) "Non-verbal" is signification by implication, where an expression has a meaning and that meaning has an external implicate. As soon as one understands from the expression what it signifies, the mind makes a transition from what is signified by

9 Generally possibility just means what is not impossible, while specific possibility means contingency, that is, what is neither impossible nor necessary. See Avicenna, *Shifāʾ, Manṭiq, Qiyās*, 162.1–3.

10 Similar remark at al-Ṭūsī, *Sharḥ al-Ishārāt*, vol. 1, 139.3–5.

the expression to its implicate. Without the ability to perform such a mental transition, this implicate would not be understood. Even though signification by containment shares with [implication] that both require rational inquiry (*naẓar ʿaqlī*) in order to know the implicate, in the case of implication, and the part, in the case of signification by containment, there is still a difference. Namely that in the case of containment, one gets to know a part *internal* to what is signified by the expression, whereas in the case of implication one gets to know something *external* to what is signified by the expression. This is why signification by containment is verbal, unlike signification by implication.[11]

[T19] Al-Khūnajī, *Kashf Al-Asrār*, 11.3–7; 12.13–14

[*signification by implication is a mental process, and the outcome of imposition of meaning*]

The [sort of] implying (*luzūm*) that is considered to be an implication (*iltizām*) [in the strict sense] is mental implication (*luzūm dhihnī*). Otherwise, uttering the expression would convey no understanding of the external meaning at all, since there would be no imposition for it, and no transition in the understanding from its imposed [meaning] to [the further, external meaning]. So [the external meaning] would not be signified, since what is meant by saying "an expression signifies a meaning" is that someone who knows the imposition will understand [the external meaning] in the moment of the utterance of [the expression]. External implication, by contrast, is not considered [as implication in the strict sense], because the expression might signify something that is not implied in external reality by what it names. [...]

[12.13] Implication is a signification based on imposition (*waḍʿiyya*), since the expression signifies the implicate of whatever it names, due to the fact that it has been imposed for something that implies [the implicate]. What is intended by "signification based on imposition" could be imposition either with or without an intermediary (*ibtidāʾan aw bi-wāsiṭa*).

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11 Similar passages at Jamāl ad-dīn Ibn al-Ḥājib, *Kitāb Muntahā al-wuṣūl wa-l-amal fī ʿilmay al-uṣūl wa-l-jadal* (Beirut: Dār al-Kutub al-ʿilmiyya, 1985 [1405]), 17.6–7 and Ibn al-Ḥājib, *Mukhtaṣar al-muntahā fī l-sūl wa-l-amal fī ʿilmay al-uṣūl wa-l-jadal*, ed. Naẓīr Ḥamādū (Algiers: Dār Ibn Ḥazm, 2006), 221.

[T20] Ibn al-Ḥājib, *Mukhtaṣar al-muntahā,* 220.1–221.4

[***linguistic vs. non-linguistic signification***]

It belongs to the benevolence of God to have created the linguistic principles (*iḥdāthu l-mawḍūʿāt al-lughawiyya*). Let us speak about their definition and types. We begin with their imposition, and how they may be known. *First*, every expression has been posited for some meaning. *Second*, [expressions] are divided into two types: simple and compound. The simple one is [expressed] by a single word. It is said [by the logicians] that it is posited for a meaning, and none of its parts signifies.[12] […] [221.1] The simple [expression] is classified into noun, verb, and particle. Its verbal signification is, with regard to its complete meaning, signification by congruence; and with regard to a part of it, signification by containment. Non-verbal (*ghayr lafẓiyya*) [signification] is implication. And one may say: [it is an implication] if [the signification] is by means of the mind (*dhihnī*).

[T21] Tāj al-Dīn al-Urmawī, *al-Ḥāṣil min al-Maḥṣūl fī uṣūl al-fiqh*, vol. 1, 440.4–8[13]

[***signification in law: reasoning from a contrary case***]

If [the statement qualified by an attribute] signified that a ruling is not true for a statement with another attribute, it would signify this either by congruence—but this is wrong, since the denial that a legal ruling applies for one of two attributes, is not the same as affirming it for another attribute—or by implication—which is also wrong, because the absence of an implied affirmation for one of two attributes does not amount to denying it for the other.

[T22] al-Bayḍāwī, *Minhāj al-wuṣūl ilā ʿilm al-uṣūl*, 69.6–8

[***signification in law: reasoning by analogy***]

It is said: if it did signify [i.e. if an explicit ruling signified a further ruling for an unmentioned case], it would do so either by congruence (*muṭābaqatan*) or by implication (*iltizāman*). We say that it signifies by implication, since it has been

12 Ibn al-Ḥājib, *Muntahā al-wuṣūl*, 16, last line.

13 Note that this is not the same al-Urmawī who is cited elsewhere in this volume, Sirāj al-Dīn al-Urmawī.

established that the assignment (*tartīb*) signifies the causality (*ʿilliyya*). When the cause (*ʿilla*) is eliminated, the caused likewise.

[T23] Al-Abharī, *Kashf al-ḥaqāʾiq*, 19.5–12

[*homonomy problem, cf. T12*]

The Imām [*Fakhr al-Dīn al-Rāzī*] *said*: congruence is for the expression completely to signify what it names; containment is for it to signify a part of what it names, just insofar it is a part. With the latter restriction [sc. "just insofar as it is a part"] we take precaution against expressions that signify part of what they name by congruence, but homonymously. Implication, finally, is for the expression to signify the implicate of what it names, just as such.

We say: this restriction is also necessary for congruence. So one should [instead] say: congruence is for the expression to signify what it names just insofar it has been posited for it. This as a precaution against the expression that is homonymous between whole and part signifying the part by containment.

[T24] Al-Ṭūsī, *Sharḥ al-Ishārāt*, 181.7–9

[*against al-Rāzī on signification by implication*]

[*Avicenna*: When we say "such-and-such an expression signifies such-and-such," we mean by way of congruence or of containment, not by way of implication.] He means signifying the quiddity or the meaning of a name, not absolute signification (*dalāla muṭlaqa*), as the commentator [i.e. al-Rāzī] understood it, who went so far as to assume that signification by implication is to be renounced across the board.

[T25] Al-Kātibī, *Asʾilat*, 143.12–21

[*modifications to al-Rāzī's definition of congruence in T12*]

The Imām [*Fakhr al-Dīn al-Rāzī*] *said*: the expression is considered either in relation to the entirety of what it names, which is congruence, etc.

We say: this calls for further inquiry. *First*: when the expression is considered in relation to the entirety of what it names, this is not congruence; and when in relation to its part, this is not containment; and when in relation to its

external implicate, this is not implication; rather, these are the *signification* of the expression. This being so, he should have said "signification of the expression" [not just "the expression"]. *Second*: with regard to congruence, he ought to have added, "insofar as it is what it names," just as he said for containment "insofar as it is a part of it," and for implication, "insofar as it is such." [...] [143.20] [This qualification] has to be introduced for congruence in order to exclude signification of the part by containment, in the case of [an expression] imposed for both the whole and the part; and of the implicate by implication, in the case of [an expression] imposed for both the implicate and what implies it.

[T26] Ibn Kammūnā, *Sharḥ al-Talwīḥāt*, vol. 1, 22.5–7

[*the general does not signify the specific*]

The general (*ʿāmm*), for instance "animal," has no signification of the specific (*khāṣṣ*), for instance a specific term like "humanity," because none of the three [kinds of] signification apply. The general [expression] has not been posited for the specific, so that it would be signified by congruence; the specific is not a part of it so that it would be signified by containment; and it is not an implicate of it so that it would be signified by implication.[14]

[T27] Al-Qarāfī, *Sharḥ Tanqīḥ*, 26.15–19

[*the classification in terms of communication*]

[Signification] is of three kinds. Signification by congruence, where the hearer (*sāmiʿ*) understands the totality of what is named by what the speaker has said. Signification by containment, where the hearer understands a part of what is named by what the speaker has said. Signification by implication, where the hearer understands the obvious implicate of what is named (*lāzim al-musammā al-bayyin*) by what the speaker has said, and this is the implicate he had in mind. The first is for instance to understand the sum of two fives from the expression "ten." The second is for instance to understand five and its definition from the expression ["ten"]. The third is for instance to understand evenness from the expression.

14 Similar is Quṭb al-Dīn al-Shirāzī, *Sharḥ Ḥikmat al-ishrāq*, 36.14 f.

[T28] Al-Ḥillī, *Qawāʿid*, 195.6–9

[***the theory applies only to signification by imposition***]

You should know: the expression may sometimes signify according to nature, as *aḥ* signifies trouble in the chest, or may do so according to reason, as "sound (*ṣawt*)" signifies someone making a sound, or it may do so according to imposition. What is intended here is [only] the latter.

[T29] Al-Iṣfahānī, *Sharḥ al-Minhāj*, vol. 1, 293.1–5

[***commentary on al-Bayḍāwī in T22, on legal reasoning by analogy***]

The author [sc. al-Bayḍāwī] responds to the question at stake that [the legal ruling of the unmentioned case] is indeed signified by implication, since it is established that the assignment of the ruling to the attribute indicates the causality (*ʿilliyya*) of the attribute (*waṣf*) with regard to the ruling. And the absence of the cause assuredly implies the absence of the effect. As for what [the opponent] says, namely that the mind does not turn to it, this is rejected and not conceded. On the view of the legal theorists (*uṣūliyīn*), for signification by implication it is sufficient that conviction (*jazm*) arises through what has the implication (*malzūm*), by conceptualizing simultaneously both the implicate (*lāzim*) and what implies it (*malzūm*). It does not require that the mind [actually] turns from the latter to the former.

CHAPTER 5

The Categories

A major difference between logic before and after Avicenna in the Islamic East is the importance accorded to the categories.[1] In late antiquity, Aristotle's *Categories* was a fundamental text, the first work that students would encounter in their philosophy instruction apart from Porphyry's brief *Introduction*. It duly continued to receive significant attention in Syriac and then in Arabic.[2] We know from lists of his works that al-Kindī commented on the *Categories* and it plays a large role in his thought, as in a short text in which he tries to prove the immateriality of the soul using almost only ideas drawn from this work.[3] The Baghdad school also devoted attention to it: we have fragments of al-Fārābī's full commentary as well as a short paraphrase, and an extensive surviving commentary by Abū l-Farāj Ibn al-Ṭayyib.[4] A manuscript held in Istanbul (Ayasofya 2483) has comments on the *Categories* by members of this school and those in its orbit, including Abū Bishr Mattā, al-ʿĀmirī, and Abū Sulaymān al-Sijistānī.[5] If we contrast this to the post-Avicennan period, we find for instance that neither the highly influential logic textbook *al-Risāla al-Shamsiyya* of al-Kātibī nor the

1 For the full story see A. Kalbarczyk, *Predication and Ontology: Studies and Texts on Avicennian and Post-Avicennian Readings of Aristotle's Categories* (Berlin: 2018).

2 For Syriac see K. Georr, *Les Catégories d'Aristote dans leurs versions syro-arabes* (Beirut: 1948); S. Brock, "The Syriac Commentary Tradition," in C. Burnett (ed.), *Glosses and Commentaries on Aristotelian Logical Texts* (London: 1993), 3–18; H. Hugonnard-Roche, *La logique d'Aristote du grec au syriaque* (Paris: 2004); D. King, *The Earliest Syriac Translation of Aristotle's Categories: Text, Translation and Commentary* (Leiden: 2010); S. Aydin, *Sergius of Reshaina: Introduction to Aristotle and his Categories, Addressed to Philotheos* (Leiden: 2016); E. Fiori and H. Hugonnard-Roche (eds), *La philosophie en syriaque* (Paris: 2019).

3 P. Adamson and P.E. Pormann, "Aristotle's *Categories* and the Soul: an Annotated Translation of al-Kindī's *That There Are Separate Substances*," in J.M. Dillon and M. Elkaisy-Friemuth (eds), *The Afterlife of the Platonic Soul. Reflections of Platonic Psychology in the Monotheistic Religions* (Leiden: 2009), 95–106.

4 M. Zonta, "Al-Fārābī's *Long Commentary* on Aristotle's *Categoriae* in Hebrew and Arabic: a Critical Edition and English Translation of the Newly Found Extant Fragments," in B. Abrahamov (ed.), *Studies in Arabic and Islamic Culture II* (Ramat-Gan: 2006), 185–253; D.M. Dunlop, 1958/1959, in "Al-Fārābī's paraphrase of the *Categories* of Aristotle", *Islamic Quarterly*, 4: 168–197 and 5 (1): 21–54; C. Ferrari, *Der Kategorienkommentar von Abū l-Faraǧ ibn al-Ṭayyib* (Leiden: 2006). We also have works by Yaḥyā Ibn ʿAdī based on the *Categories*, including one whose title shows his commitment to the categorial scheme: *That There Are Ten Categories, No More and No Less*. As we'll see below, Avicenna no longer shares this conviction.

5 M. Türker, "Al-Āmirī ve Kategoriler'in şerhleriyle ilgili parçalar," *Araştırma* 3 (1965), 65–122.

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pathbreaking *Kashf al-Asrār* by al-Khūnajī have a section on the *Categories*. This despite the fact that there is a section on the categories in Avicenna's own *Shifā'* and in some of his other works, like *al-Mukhtaṣar al-awsaṭ fī l-manṭiq* [T2].[6]

Yet it is indeed due to Avicenna's influence that this element of the traditional logical curriculum has lost its relevance. His logic is "categorial," because like Aristotle's logic it is about ascribing predicates to subjects (this being the meaning of the Greek verb *kategorein*). But it gives no privileged place to the ten traditional "categories." For this reason he says that the logician needs to know the five types of predicate discussed in Porphyry's *Introduction*, namely genus, species, specific difference, proper accident, and accident, whereas when it comes to the ten categories, "there is no necessity whatsoever, or even anything like necessity, to know these for the sake of studying logic" [T3]. Ultimately, he is far more interested in a classification of attributes in terms of how they relate to essences and their existence [T8]. Insofar as one would want to discuss Aristotle's ten categories as a systematic way of grouping different kinds of predicate, this is no task for the logician, as it presupposes metaphysics [T4]. In fact, starting students off with the *Categories* could even be harmful, since it is so confusing to begin with an extraneous discussion [T5]. Logic is accordingly defined with no reference to the list of ten categories [T6]. If they have any use to logicians at all, it is only in providing them with a way to find examples [T3].

Furthermore, Avicenna is not committed to Aristotle's list, which he takes to be an attempt to delineate the most general of genera. He voices skepticism about this numerous times, even in the context of talking about natural philosophy [T1]. While there is a long history of attempts to prove that there are exactly ten, Avicenna deems these a waste of time [T2]. In his Persian philosophical *summa*, the *Dāneshnāme*, he does offer a systematic overview of the categories [T7], and in the section of the *Shifā'* devoted to the categories, he presents three approaches for establishing the "right" list found in Aristotle.[7] But that is only a kind of historical report of what previous logicians have tried to do, without any commitment on his own part. Indeed, the systematization of the *Dāneshnāme* already implicitly suggests that one could group the nine accidental categories under higher genera, because he divides quantity and quality

6 A. Kalbarczyk, "The *Kitāb al-Maqūlāt of the Mukhtaṣar al-awsaṭ fī l-manṭiq*: a Hitherto Unknown Source for Studying Ibn Sīnā's Reception of Aristotle's Categories," *Oriens* 40 (2012), 305–354. Cf. H. Eichner, "The Categories in Avicenna: Material for Developing a Developmental Account?" in S. Ebbesen, J. Marenbon and P. Thom (eds), *Aristotle's Categories in the Byzantine, Arabic and Latin Traditions* (Copenhagen: 2013), 59–86.

7 Avicenna, *Shifā', Manṭiq, Maqūlāt*, 82.4–83.8.

apart from the other seven, on the basis that the latter require a relation to something external [T4]. This would echo a challenge to the fundamentality of the ten categories that already appeared in antiquity before the late ancient commentary tradition.[8]

The same challenge forms a part of a bold revision to the Aristotelian category scheme proposed by Suhrawardī.[9] Actually he thinks that the scheme is not originally Aristotelian. Instead, following an idea already accepted by the late ancient authors Iamblichus and Simplicius, the list of ten is claimed to go back to a Pythagorean author named Archytas [T9]. In fact the works in question is are two pseudonymous treatises that postdate Aristotle, but Suhrawardī was not to know that.[10] Another figure in the background of his approach is al-Sāwī. It is thanks to Suhrawardī that we know al-Sāwī to have reduced the list of ten categories to only four: substance, quantity, quality, and relation [T15].[11] It seems hard to believe that Suhrawardī developed his own view independently, as he claims in this same passage, since it is the same as al-Sāwī's with the exception that he believes motion must be retained as a category [T10]. With that exception, he agrees with al-Sāwī that the other Aristotelian categories (where, when, action, being-acted-upon, and position) can be seen as sub-types of the really highest genera, falling especially under relation and motion [T16, T17, T18].

Like the Aristotelian list, which groups together the nine accidental categories without seeing them as a single genus, Suhrawardī's list contrasts the category of substance to the remaining four, which he collectively refers to using the idiosyncratic term "feature (*hay'a*)" [T10, T11]. Echoing Aristotle's distinction between that which is "present in" a subject and that which is "said of" a subject—for Suhrawardī's own version of Aristotle's classification, see [T14]—Suhrawardī defines the "feature" as something that "inheres in

8 See M. Griffin, *Aristotle's Categories in the Early Roman Empire* (Oxford: 2015).

9 Studied in detail in H. Amin Beidokhti, *Avicenna Illuminated: Suhrawardī's Critique of Aristotelian Categories and Hylomorphism* (Berlin: 2024); see also H. Amin Beidokhti, "Suhrawardī on Division of Aristotelian Categories," in Abdelkader Al Ghouz (ed.), *Islamic Philosophy from the 12th to the 14th Century* (Bonn: 2018), 377–408.

10 See T.A. Szlezák (ed. and trans.), *Pseudo-Archytas über die Kategorien* (Berlin: 1972); M.A. Gavray, "Archytas lu par Simplicius. Un art de la conciliation", *The International Journal of the Platonic Tradition*, 5 (2011), 85–158; Griffin, *Aristotle's Categories*, ch. 3.

11 The late ancient commentator Ammonius already identifies these four as "the principal and primary categories": see Kalbarczyk, *Predication and Ontology*, 144–145. There is also an obvious comparison to attempts to reduce the list in Latin medieval thought, as in Ockham. On the latter see G. Klima, "Ockham's Semantics and Ontology of the Categories," in P.V. Spade (ed.), *The Cambridge Companion to Ockham* (Cambridge: 1999), 118–142.

something else" [T11]. He needs to be careful with his language here, though, because Avicenna had contrasted "substrate (*maḥall*)" to "subject (*mawḍū*)."[12] The point of this, as implicitly mentioned in [T13], is that matter is a "substrate" for form without being a "subject" in its own right. With this terminological clarification in hand, Suhrawardī is able to define the "feature" as that which inheres in a proper, independently subsisting "subject" [T12]. This distinguishes the "feature" from the substantial, hylomorphic forms acknowledged by the "Peripatetics," which would inhere in a non-independent subject of inherence. For Suhrawardī himself there are no such forms, but only qualities of various kinds.[13] Al-Ṭūsī refers back to this whole discussion, and likewise tries to keep apart matter as a "subject" from a fully constituted substance as "subject" [T26].

Unlike Suhrawardī, Fakhr al-Dīn al-Rāzī does not develop an original theory of the categories. This for good reason: he agrees with Avicenna that the whole idea is rather unhelpful. Following approaches he finds in Avicenna, he does offer systematic deductions of the ten traditional categories [T22, T23], but he also recognizes at the end of [T22] that Avicenna was not really committed to the project. Avicenna was also right to say that if category theory belongs anywhere, it is metaphysics [T21], since it does not contribute to the proper task of logic, namely to discover inference rules that allow us to start with what is already known and acquire further knowledge on this basis [T20].[14] Al-Ṭūsī, by contrast, is more inclined to accept some role for the categories in logic. While he admits that investigating them "is not among the logical inquiries," still it is very useful to organize the predicates into lower and higher genera in order to find premises and definitions [T24, T25]. This is much like Avicenna's grudging point that the *Categories* might help with finding examples [T3]; in fact al-Ṭūsī also mentions finding examples at [T25]. But in tone at least, it is friendlier to the Aristotelian tradition, an irenic attitude we also find in al-Ḥillī [T27]. He also makes an important point, which was implicit in what we said above about the contrast between substance and accidents (or to speak with Suhrawardī, substance and "features"): it is not clear whether substance is in

12 To capture this contrast clearly, in the present chapter we translate *maḥall* as "substrate"; elsewhere we usually translate it as "subject of inherence." For the Avicennan distinction see *Shifāʾ, Ilāhiyyāt* 2.1 and for further discussion, A. Lammer, *The Elements of Avicenna's Physics. Greek Sources and Arabic Innovations* (Berlin: 2018), 116–119.

13 See further the passages from Suhrawardī in the Form and Matter chapter of our forthcoming volume in this series on Physics and Psychology.

14 See [T5] in our chapter on the Subject-Matter of Logic for Avicenna's statement that this is the purpose of the discipline.

fact a genus, and conversely, the Aristotelian needs to avoid admitting "accident" as a kind of super-genus, a single category that would subsume the nine accidental categories [T28].[15]

Texts from: Avicenna, Suhrawardī, Fakhr al-Dīn al-Rāzī, Naṣīr al-Dīn al-Ṭūsī, al-Ḥillī

[T1] Avicenna, *Shifāʾ, al-Samāʿ al-ṭabīʿī*, vol. 1, 135.2

[*lack of commitment to the traditional scheme*]

As for us, we would not insist on preserving the well-known canon according to which the genera are ten, with each of them truly being a genus, and with nothing falling outside them.

[T2] Avicenna, *al-Mukhtaṣar al-awsaṭ, Maqūlāt*, 331.2–21

[*the ten categories as highest genera*]

Whatever is said with no composition (*taʾlīf*) involves neither truth nor falsehood, since neither affirmation, nor negation, nor judgment apply to it. For every judgment comes about by [predicating] one thing of another, and this is a composition. As for that which is said without combination, its meanings (*maʿānī*) fall under one of the ten highest genera, which are substance, quantity, quality, relation, where, when, possession, position, acting, and being acted upon. We shall give a detailed account of each, but without occupying ourselves with establishing that they can be neither less nor more in number. For this is impossible, and everything that has been said with regard to this is a forced effort (*takalluf*), and nothing compelling (*shayʾan ḍarūriyyan*).

[*existence and accident are not higher genera*]

We do, however, say that "existent" (*al-mawjūd*) does not comprise the ten [genera] as a genus (*lā yaʿummu l-ʿasharata ʿumūm al-jins*), nor does "accident" comprise the nine [genera apart from substance] as a genus. For (a) everyone agrees that it is a condition for genus that it be essential (*ḏātī*); and (b) most

15 For the question whether substance (or existent) is a genus, see [T2] in this chapter and also Suhrawardī, *al-Mashāriʿ: Ilāhiyyāt*, 222.1–5; *Ḥikmat al-ishrāq*, 61.13–16 and 70.13–71.4; for the question whether accident is a super-genus, see Suhrawardī, *al-Muqāwamāt: Ilāhiyyāt*, 149.1–6.

agree that it has to apply synonymously and be predicated equally (*mutawāṭi' al-ḥaml*) of its particulars. These two notions are both missing in the case of "existent" and "accident." (a) For just by understanding the meaning and definition of a thing, we do not understand whether it is existent or non-existent. If we know what right triangle is, we know the genus and essential specific difference, so we cannot fail to understand such things as unqualified triangle, figure, and quality. The existence [of a right triangle], by contrast, needs to be demonstrated. So existence is [only] a concomitant of the quiddity, not a constituent for it (*lāzim lā muqawwim li-l-māhiyya*). Likewise, if we understand whiteness and heat, we necessarily understand them to be qualities, whereas in the absence of demonstration, it remains unclear to us that they are accidents. "Accident" is concomitant to the nine and not essential for them (*lāzimun li-l-tis'ati lā ḏātī*). Likewise, [accident] does not make their essences known[16] but only makes known their relations to the subject; first their essences exist in the intellect, and only subsequently do they become related to the subject. It has then become clear that neither "existent" nor "accident" is essential. (b) Moreover, they are both non-synonymous. For "existent" applies first to substance, and subsequently, by way of a known sequence (*tartīb ma'lūm*), to quality, quantity, and the rest. The same goes for "accident"; for quantity is prior to where and when; and according to some people quality is prior to quantity, or vice-versa, according to others. Hence, it has become clear that neither "existent" nor "accident" is a genus.

[T3] Avicenna, *Shifā', Manṭiq, Maqūlāt*, 4.10–5.18

[*the logician needs to know the five predicables, not the ten categories*]

Understanding these five simple [expressions, i.e. the predicables] is useful for syllogisms, and their utility for definitions and descriptions is even more obvious. For the definitions are made up of genera and specific differences, while the descriptions are made up of genera, proper accidents, and accidents (they mostly pertain to species). It is necessary, or practically necessary (*ka-al-ḍarūrī*), to study these states that attach to the simple expressions before setting out to understand the composite [expressions]. Now, the simple expressions do also have other states [besides the five predicables], namely that they signify things that exist in one of the two ways we explained when making known the subject-matter of logic [sc. extramental and mental existence]. But

16 Reading *yu'arrifu* instead of *na'rifu* (also in the case of the next verb).

there is no necessity whatsoever, or even anything like (*shabah*) necessity, to know these for the sake of studying logic: neither with regard to the state of signifying particular individuals, since this is something that is of no use in any science, let alone in logic; nor with regard to the state of their signifying species, since this is something that won't help anyone in the discipline of logic, as the discipline of logic is completed without it; nor with regard to the state of their signifying the highest genera, which are customarily called 'categories' (*maqūlāt*), and have a dedicated treatment in a book at the beginning of logic, called the *Categories* (*qāṭīghūrīyās*).

[5] Once the student of logic has come to understand what we taught about the states of the simple expressions, and understood name (*ism*) and verb (*kalima*), he can proceed to the study of propositions (*qaḍāyā*) and the way they are divided [into kinds], syllogisms (*qiyāsāt*), definitions (*taḥdīdāt*) and their various types, the material contents (*mawādd*) of syllogisms, the demonstrative and non-demonstrative definitions, and their genera and species—even if it has never so much as crossed his mind that there are ten categories, and that these [categories] themselves or something falling under them are signified by the simple terms. No significant shortcoming arises from neglecting this, and no weakness intrudes into logic if someone believes that these categories are more or less in number. Knowing whether these things are to be characterized as "genera" is no more necessary for [the logician] than knowing whether other things are characterized as species. Rather, it belongs to first philosophy (*al-falsafa al-ūlā*) to understand these [states] with regard to how they exist (*kayfiyyat al-wujūd*), while understanding them with regard to the fact that the soul conceptualizes them (*taṣawwur al-nafs lahā*) belongs to the limit (*ḥadd*) of natural philosophy where it is adjacent to first philosophy [i.e. psychology], and understanding that they demand expressions that are applied to them pertains to the discipline of the linguists. Understanding that the simple expressions apply to one of these things without specifying the expressions which apply to them is just like knowing that the existing things have simple expressions which are posited for them in actuality or potentiality. It is no more suitable for the logician, insofar as he is a logician, to know this about these [sc. the categories] than to know this about other things. Just insofar as he is a logician, he need not trouble himself with knowing that the simple expressions are posited for a certain type of thing, namely the general universals [i.e. the highest genera], while he does not know this with regard to another type of thing, namely specific universals [i.e. the species]. Admittedly, there is just one thing [that might justify including the *Categories* in logic]: the student may benefit from this instruction in a way, since [by studying the *Categories*] he acquires a sort of

overview of [existing] things (*iḥāṭa mā bi-l-umūr*), and becomes able to adduce [various] examples (*amthila*).

[T4] Avicenna, *Shifāʾ, Manṭiq, Maqūlāt*, 6.12–7.7

[*the categories cannot be established in logic*]

You should know that all their attempts to establish the number of these ten [categories, and show] that there is nothing [more] general[17] than them [i.e. that they cannot be subsumed under a higher genus], that they do not overlap, that each has some characteristic property (*khāṣṣiyya*), that nine of them differ from the first because the latter is substance whereas they are accidents, and so on and so forth, amounts to elucidations (*bayānāt*) which have been imported from other disciplines (*ṣināʿāt*), but greatly abbreviated, [which makes them useless] since there is no way to acquire understanding of this than by thorough examination (*istiqṣāʾ*). And thorough examination becomes possible only once one has arrived at the level of science called "first philosophy." So you need to realize that the purpose of this book is as follows: by way of taking this for granted, you become convinced that there are ten things which are highest genera, comprising [all] existents, and it is to these that the simple expressions apply. And you come to know that one of them is substance, while the other nine are accidents, without it being demonstrated to you that the nine are accidents; rather, you simply have to accept this. [7] Presently, there is no way for us to demonstrate to you that the qualities and quantities are accidents, without demonstrating to you the necessity of that number [sc. of the categories]—you simply have to accept this—and without demonstrating to you that each of them is a genus in the proper sense (*bi-l-ḥaqīqa*), not in the sense of an analogical expression (*lafẓ mushakkik*), and not as signifying a non-constitutive concomitant (*lāzim ghayr muqawwim*). Moreover, [here] at the beginning of your studies there's no way for you to know, for example, that quality applies to the species which are below it in the manner of a genus, and that it is neither a homonymous, nor an analogical, nor a synonymous name. Rather, it is constitutive for what is below it. The same goes for quantity. Whoever occupied himself with that [issue] in this book took trouble over something that lies beyond his ability. The same is true for the state of the characteristic properties (*khawāṣṣ*) which were mentioned; for these were simply mentioned [and not properly investigated].

17 Reading *lā ʿāmm lahā* instead of *lā ʿilm lahā*.

[T5] Avicenna, *Shifāʾ, Manṭiq, Maqūlāt*, 8.10–15

[***against placing the categories at the beginning of the logic curriculum***]

As for us, despite what we just said, whether we like it or not[18] we do follow the method and customs of people [who have written on logic]. *But we say*: this book, and its being placed at the beginning, despite being of no great use, may at the outset [of one's studies] even be detrimental. How often have I seen a person confused themselves as a result of reading this book, leading him to imagine things whose verification as they really are (*ʿalā kunhihā*) cannot be undertaken in this book! As a consequence, [such a person] becomes mixed up with imaginations that are far from the truth, and as a result arrives at [false] doctrines and opinions which stain his soul. Thus, onto the tablet of his intellect (*fī lawḥ ʿaqlihī*) something is inscribed that subsequently will not be deleted through inscribing onto it something else; and as soon as it mixes with it, he becomes confused.

[T6] Avicenna, *Ishārāt*, 39.9–40.7

[***logic defined without reference to the categories***]

Logic is the science (*ʿilm*) in which one learns the [various] kinds of transitions (*intiqālāt*) from items [that have already been] attained in the human mind to items that are still to be attained (*umūr mustaḥṣila*); the conditions of these items (*aḥwāl hāḏīhi l-umūr*); the number of ways the arrangement [40] and form of the transition are validly carried out (*jāriyāni ʿalā l-istiqāma*); and the ways where this is not the case. When it comes to each verification devoted to the arrangement of things (*kullu taḥqīqin yataʿallaqu bi-tartībi l-ashyāʾ*) such that one is led from these to other things—or indeed, [devoted] to any composition (*taʾlīf*)—such a verification has to become acquainted with the simple things that are put into arrangement and composition, not from every perspective, but only from the perspective due to which it is possible for this to happen. For this reason, the logician has to consider only some conditions of simple notions (*aḥwāl min aḥwāl al-maʿānī al-mufrada*), and then can move on to a consideration of the states of composition (*aḥwal al-taʾlīf*).

18 Reading *shiʾnā am abaynā* instead of *shiʾnā aw bayyanā*.

[T7] Avicenna, *Dānishnāma, Ilāhiyyāt*, 28.5–31.3[19]

[*the nine accidental categories, three of which are "relational"*]

The accident is of two kinds. (a) One of them is such that whenever you conceptualize it, you do not in any way need to consider anything other than its substance and extrinsic to its substance. (b) The other one is such that, in conceptualizing it, you do have to consider something extrinsic.

(1) The first type falls into two [sub-]kinds. One of them is such that because of it, measurement and division, and more and less, befall substance; this is called 'quantity' (*čandī*), in Arabic *kammiya*. The other, by contrast, is a state (*ḥāl*) in the substance, whose conceptualization does not require considering anything extrinsic, and by virtue of which [substance] does not become divisible. This is called 'quality' (*čegūnegī*), in Arabic *kayfiyya*. Examples of quantity: number, length, width, depth, and time. Examples [29] of quality: health and illness, chastity, prudence, knowledge, power and weakness, whiteness and blackness, odor, taste, sound, warmth and cold, wetness and dryness, etc.; and likewise roundness, length, three-sidedness, four-sidedness, mildness and strictness, etc.

(b) The second type falls into seven [sub-]kinds: relation (*eẓāfat*); "where" (*kojā'ī*), in Arabic *ayna*; "when" (*keyī*), in Arabic *matā*; "position" (*nehād*), in Arabic *waḍ'*; "having" (*dāsht*), in Arabic *milk*; "act" (*konesh*), in Arabic *an yaf'ala*; and "being acted upon" (*bakonīdan*), in Arabic *an yanfa'ila*. Relation is a condition of something, where [the thing] is (*bovad*) [what it is] through that relation (*nesbat*), and where because of that relation (*nesbat*), one comes to know that something else is its counterpart, like fatherhood for the father, inasmuch as the son exists as his counterpart; and likewise friendship, brotherhood, and kinship. "Where" is a thing's being in its place, like being below and above, etc. [31] "When" is a thing's being in time, just like one action being yesterday and another one being tomorrow. "Position" (*waḍ'*) is the condition of the position (*nehād*) of the parts of the body in various directions, such as sitting and standing, bowing down and prostrating. When the positions (*nehādhā*) of the hand, leg, head and other limbs are in a certain condition with regard to the directions of right and left, below and above, in front and behind, then one says "is sitting," and in another condition, "is standing." As for one thing's "having" with regard to another, this category (*bāb*) has not yet become known to me. "Act-

19 A very similar scheme is presented in *Ta'līqāt*, no. 944, 524.7–526.11.

ing" (*an yafʿala*) is for instance to cut at the moment of cutting and to burn at the moment of burning. And "being acted upon" (*an yanfaʿila*) it for instance to be cut at the moment of cutting and to be burnt at the moment of burning.

The difference between relation (*eẓāfat*) and these other relations (*nesbathā*) lies in the fact that the meaning of a relation derives from the thing [31] to which it has a relation, as fatherhood comes about through the very existence (*hastī*) of the son and through [the son's] being (*hast būdan*). By contrast the "where" is not due to the very being (*būdan*) of the place; nor is the "when" due to the very being of time; and the same reasoning goes for the others.

[T8] Avicenna, *Shifāʾ, Manṭiq, Maqūlāt*, 18.6–13

[***alternative division of attributes***]

You should know: the attributes of things are of several types. For it may be (a) that the essence (*dhāt*) of the subject of attribution (*al-mawṣūf*) is [already] established, and is a [self-]subsisting notion (*maʿnā qāʾim*). Then, the attribute that describes it attaches to it from outside, either as an accident or comcomitant. Or (b) the subject of attribution is taken insofar as its essence is established, but the attribute that describes it does not attach to it from outside; rather, it is a part of its subsistence. Or (c) the subject of attribution is taken insofar as its essence is *not* established, and the attribute attaches to it so as to establish its essence, but without being part of its essence. Or (d) the subject of attribution is taken insofar as its essence is *not* established, and the attribute does not attach to it from outside, but rather it is a part of its existence (*wujūd*). Or finally (e) the essence [of the subject of attribution] has not yet been established, and the attribute attaches to it not due to its very essence (*lā li-nafs ḏātihi*), but through the attachment of a concomitant to what establishes it, or through an accident that is primary for it.

[T9] Al-Suhrawardī, *Talwīḥāt*, 183.14–17

[***the authoritative status of the categorial scheme***]

Question: why did you oppose the First Teacher [Aristotle] and the consensus view (*al-jumhur*)? *Answer*: the categories are not taken from the Teacher but

rather from one of the Pythagoreans, called Archytas; and even he proposes no argument for restricting them to ten. What we follow is [only] demonstration.

[T10] Al-Suhrawardī, *Mashāriʿ, Ilāhiyyāt*, 278.14–279.8

[*fivefold categorial division into substance and four types of "feature"*]

Quiddity, which is distinct from (*warā'*) existence, is either substance or non-substance. We here call what is not a substance a "feature (*hay'a*)." Now, every feature is either such that its fixity (*thabāt*) is conceptualized, or not conceptualized (*lā yataṣawwar*). If not, then it is motion. If on the other hand its fixity is conceptualized, then either it is grasped intellectually only through a relationship (*qiyās*) to something else, or may be grasped without this. What is grasped intellectually only through a relationship to something else is relation (*iḍāfa*). What is grasped without [279] such a relationship is either such that equality, difference (*al-tafāwut*), and division are necessary to its essence, or not necessary. If these are necessary, then it is quantity; if not, then it is quality. Thus quality occurs at the end of the division and it possesses distinguishing marks (*mummayizāt*) from each side of the division.[20] Inasmuch as it is a feature, it is distinct from substance. Inasmuch as it is stable (*qārra*), it is distinct from motion. Inasmuch as needs nothing outside it and its subject of attribution in order to be conceptualized, it is distinct from relation. And inasmuch as it has no need for consideration of division, it is distinct from quantity. As a result, its description includes all things that differentiate it from its four counterparts. This is the list of five [categories].

[T11] Al-Suhrawardī, *Ḥikmat al-ishrāq*, 61.13–62.2 [trans. Walbridge and Ziai, mod.]

[*substance vs. "feature"*]

Everything that has existence outside the mind either inheres in something else, as fully diffused in it—this we call a "feature"—or it does not inhere in another thing as fully diffused in it—this we call a "substance." In the definition of "feature" we do not need to add the qualification "not as a part of it," for the part is not diffused in the whole.

20 Cf. al-Suhrawardī, *Muqāwamāt, Ilāhiyyāt*, 147.10–13 for a parallel passage picking out quality in contrast to the other categories.

[T12] Al-Suhrawardī, *Mashāriʿ, Ilāhiyyāt*, 220.8–11

[***substance vs. accident, substrate vs. subject***]

In the terminological convention of the ancients, "substance" is what exists not in a substrate (*maḥall*) and "accident" is what exists in a substrate. But after Aristotle's time [the Peripatetics, i.e. Avicenna] have assigned the term (*ism*) "substance" specifically to that which exists (its existence being distinct from its essence) not in a subject (*mawḍūʿ*), while they [assign the term] "accident" to what exists in a subject. By "subject," they mean a substrate that is in its subsistence independent of what inheres in it (*ḥāll*), insofar as it is such.

[T13] Suhrawardī, *Muqāwamāt, Ilāhiyyāt*, 129.6–16

[***substrate vs. subject***]

The Peripatetics [sc. Avicenna] adopted the terminological convention of applying the term "substance" to what exists not in a subject (*mawḍūʿ*), whereas their predecessors [applied it] to what exists not in a substrate (*maḥall*). The ancients called that which has no substrate independent of it "substance," regardless whether it has no substrate [at all] or it does have a substrate, but one that is not independent of it: so the ancients had in mind subsistence that is independent of substrate. But "substance" is a conventional term and there is no point debating over conventional terms. The ancients would, however, say to [the Peripatetics]: the consideration of "being not in a subject" is different for the form on the one hand, and on the other hand for the substance, which "subsists not in a substrate." For form's being "not in a subject" is because the substrate does need it, whereas being "subsistent not in a substrate" is not due the substrate needing it; rather, it has no substrate, but is substance! If substance is in no need of [a substrate], then the criterion of being "not in a subject" [is ambiguous]: it could be the denial of a substrate, or the denial of an *independent* substrate, not because "substrate" is denied but because "independent" is denied. So the two are different in consideration.

[T14] Al-Suhrawardī, *Mashāriʿ, Manṭiq*, 47.4–48.1

[***version of Aristotle's fourfold division in* Categories *2***]

And here there is a well-known discussion which is not of great profit: as you have learned, they speak of "subject (*mawḍūʿ*)" and mean by it a substrate (*maḥall*) that for its subsistence has no need of that which inheres (*ḥāll*) in

relation to it. The "accident (*ʿaraḍ*)" is what exists in a subject, while substance (*jawhar*) is what does not exist in a subject. So the attribute[21] in the first sense is related to [the subject] by "[said] of (*ʿalā*)," while this [sc. the accident, is related to it] by "in."

So then, the quiddities are of several types. (a) Among them there is that which does not exist in a subject and is not said of a subject, e.g. the particular, determinate substance (*ka-l-jawhar al-mushār ilayhi al-juzʾiyya*). For it is not "in" a subject due to its substantiality and is not "said of" a subject due to its particularity, since there is no particular predicate, as explained earlier. (b) Among them there is that which is related [to the subject] by both [sc. "said of" and "in"], e.g. universal accidents, like being a color (*lawniyya*), since it is related to the particulars that are made subjects for it by "[said] of," but related to its substrates by "in." (c) Among them there is that which is related [to the subject] by "in" and not by "[said] of," e.g. the particular accident, since it is not predicated of, yet is "in," the substrate; the former because it is particular, the latter because it is an accident. (d) Finally, among them there is that which is related [to the subject] by "[said] of," and not by "in," e.g. "substance," which is predicated because of its being universal, [48] but is not related [to the subject] by "in," because of its being substantial.

[T15] Al-Suhrawardī, *Mashāriʿ, Ilāhiyyāt*, 278.5–12

[*against al-Sāwī's reduction to four categories: motion should be retained in the list*]

Having reduced the well-known categories in the *Book of the Intimations* (*Talwīḥāt*) to five, we after that found in one of the works of the author of the *Insights* (*Baṣāʾir*) [sc. ʿUmar ibn Sahlān al-Sāwī] a reduction into four, namely substance, quantity, quality, and relation (*nisba*). But if you consider this reduced list he mentioned, you will not find that it is correct. Motion does not fall under the category of substance, because it is an accident. Nor does it fall under quantity, since motion is not a quantity itself, even though there is measurement (*taqaddur*) for it; the fact that something is measured (*mutaqaddir*) does not imply that it is itself a quantity. Nor is it a quality, because quality is a stable feature (*hayʾa qārra*). Nor is it a relation, even though an association with a subject of inherence (*maḥall*) does occur for it, just as it does for other

21 Reading *al-mawṣūf*.

accidents. But the fact that a relation occurs to something does not mean that it is itself the relation. So if one wishes to do so, it is more plausible (*aqrab*) to affirm a reduction of the categories as five: substance, quantity, quality, relation (*iḍāfa*), and motion.[22]

[T16] Al-Suhrawardī, *Talwīḥāt*, 183.8–11

[***reducing "where" to relation***]

When body is in a place, no feature has arisen for it apart from its relation to the place; and this is a proper relation (*iḍāfa khāṣṣa*). Its being in [the place] is not existence for it, rather it is the existence of a relation. If then the relation is essential to the whole, given that every general essential (*dhātī ʿamm*) is either a genus or part of a genus, relation is general to these things; so they are not the most general genera.

[T17] Al-Suhrawardī, *Mashāriʿ, Ilāhiyyat*, 283.2–7

[***reducing acting and being-acted-upon to motion***]

That which falls under [the category of] acting is not such that its doing so is the same as its essence, and it cannot be said to be acting in consideration of a stable "feature." So within the meaning (*maʿnā*) of acting, one must take a relation (*nisba*) to something, which arises from it in something else; this other thing will have an unstable essence, and it is motion. Thus, motion is intrinsic to the meaning of acting. It is not another motion that attaches to the essence of the agent, rather, the very same motion that arises in what is acted upon enters into the meaning of being-acted-upon, and the very same one enters into the meaning of action.

[T18] Al-Suhrawardī, *Talwīḥāt*, 178.12–19

[***on the categories of motion and relation***]

Everything that exists in a subject [in other words, every accident or "feature"] is either such that its fixity can be conceptualized, or such that it cannot; the

22 By contrast Shams al-Dīn Samarqanī endorses al-Sāwī's reduction in his *Qisṭās al-afkār*, 176–177. Al-Sāwī's reduced list is also mentioned (without referring to him by name) by Fakhr al-Dīn al-Rāzī, at *al-Risāla al-Kamāliyya*, 35; *Mabāḥith*, vol. 1, 270–271.

latter is motion, which occurs in respect of quality, quantity, position, or place. Its definition was presented earlier. The [accident] which is conceptualized as fixed is either such that its essence is intellectually grasped without any relationship (*qiyās*) to something else, or this is not the case. The latter is relation (*iḍāfa*), like "fatherhood" and "sonhood," as opposed to "father" and "son." For each of the latter have a substantial existence, to which the relation may be added later. The "father" is an example, even if he is called a non-simple relative; and the "known" is an example, as is knowledge. For the known is a quiddity that in itself is realized (*māhiyya dhātuhū tataḥaqqaqu*) without any relation; not, however, insofar as it is the "known."

[T19] Al-Rāzī, *Sharḥ ʿUyūn al-ḥikma*, vol. 1, 95.5–96.2

[*the* Categories *does not belong to logic*]

You should know: properly speaking this book [sc. the *Categories*] has no connection to logic. Rather, it is one of the domains of metaphysics (*abwāb al-ʿilm al-ilāhī*). Nonetheless the Master [sc. Avicenna], in accord with the predecessors, presented this domain within this science. So we shall also comment on it. [96] *You should know*: I think the right thing to do is to give a condensed scientific account (*kalām ʿilmī mulakhaṣṣ*) of this domain. Having accomplished this, I shall return to the wording of the account that the Master has given and devote myself to commenting on it.

[T20] Al-Rāzī, *Sharḥ al-Ishārāt,* vol. 1, 18.1–13

[*the* Categories *is not useful for logic*]

[*Avicenna*] *said*: "and the conditions of these items …" (see [T6]). *You should know*: "these items" are the quiddities present in the mind. It is not in every respect that these serve as preparatory means for acquiring the unknown. Rather, this preparatory function (*istiʿdād*) is due to accidental features attached to these things, and these are [only] in the mind. For instance, [the property of] being a predicate, genus, subject, or specific difference, or essentiality and accidentality. [An investigation of] the quiddities with regard to their being genera and specific differences fulfills a preparatory function (*tastaʿiddu*), for these [sc. genera and specific differences] are used as parts of definitions. And "being a predicate" and "being a subject," as accidentally attached to [the quiddities], fulfill a preparatory function, since these function as parts of arguments. So the difference (*farq*) between (a) the items from which the transitions begin,

(b) the transitions themselves (*nafs al-intiqālāt*), and (c) how these items, considered in these respects, prepare the way for these transitions, has become clear. Now, an instruction on (a) the true natures of these things may be found in the *Categories*. Whereas instruction on (c) the respects under which these things are considered as preparing the way for the transitions comes in the *Isagoge*. And instruction on (b) the [various] types of transfers [themselves] is in the *Prior and Posterior Analytics*. Since the Master [sc. Avicenna] held that the *Categories* does not belong to logic, he of course states that logic investigates the transitions and conditions of the items from which the transitions come about, without saying that logic investigates (a) those items to which these conditions belong.

[T21] Al-Rāzī, *Sharḥ al-Ishārāt*, 20.2–14

[*Avicenna was right to exclude the* **Categories** *from logic: it deals with metaphysical questions*]

[*Avicenna*] *said*: "not from every perspective, but only from the perspective due to which it is possible for [arrangement and the composition] to occur in them." *I say*: the builder needs to investigate the simple things from which the house is constructed, namely wood, bricks and stone, [only] insofar as they are prepared [i.e., have the disposition] (*musta'idda*) to accept the form of "house-ness," not from every perspective. For insofar as he is a builder, he doesn't need to know whether the brick is composed from indivisible parts or not, or [instead] composed from matter and form.

Having understood this, you should know: those who assume that the *Categories* belongs to logic argue that logic investigates the composition of simple things from a specific perspective (*'an jihatin makhṣūṣatin*) and that one must become acquainted with these simple things, which are the highest genera. Yet the Master [sc. Avicenna] refutes this by saying that someone who investigates the composition must investigate those aspects which are disposed to accepting composition (*al-jihāt al-musta'iddata li-qubūl al-ta'līf*). Here, this would be the investigation of their being a genus or a specific difference, essentiality, accidentality, and being a subject or a predicate. However, the investigation of the true realities and natures of these things, of how they are divided into their species, and of their properties (*khawāṣṣ*), falls outside logic. Indeed, the logician would not benefit from that at all, except insofar as he would become able to adduce many examples in every domain. But this does not depend on instruction in the *Categories* either.

[T22] Al-Rāzī, *Mabāḥith*, vol. 1, 272.3–273.10

[*systematization of the categories, based on Avicenna's* Shifāʾ]

Third investigation: that there is no category beyond these ten. The Master [*sc. Avicenna*] *argued for this as follows*:[23] we have shown that contingent things are restricted to substances and accidents. So as soon as we have shown that the accidents are restricted to the remaining nine [categories], the object of inquiry will be attained. One way to indicate this is that the accident may, or may not, be such that its conceptualization requires the conceptualization of something extrinsic to its subject. If [the accident] does not require this, then it may, or may not, arise due either to the occurrence of relations between the parts [of the subject]. The first case is the [category of] position. In the second case, that accident may, or may not, be suitable (*istiʿdād*) to accept division. The first case is quantity, the second quality. By "quality" I mean nothing but an accident whose conceptualization does not require the conceptualization of anything extrinsic to its subject, or that any relation arises, and whose bearer requires no division.

As for the accident whose conceptualization does require conceptualization of something extrinsic to its subject, it must be related to that thing. Now, this relation (*nisba*) may be such that the extrinsic thing is also related to it. This is the relative (*al-muḍāf*). Or, it may be such that the relation does not require that. Then we say that this relation must be either to substances or to accidents. But it cannot be a relation to substances. For in themselves, [substances] ought not to be made the owner or target of a relation; rather, they ought to have items and states that are proper to them. So this relation is instead to accidents. Now, these accidents are either relational accidents (*aʿrāḍ al-nisab*), or not. If the former, then the relation is in fact (*bi-l-ḥaqīqa*) to the non-relational accidents (*al-aʿrāḍ al-ghayr al-nisbiyya*). For a relation to a relation must ultimately get to something non-relational, on pain of infinite regress. Hence, the relation [of one accident to another accident] is in fact to non-relational accidents. Thus it is a relation either to quantity, to quality, or to position.

Furthermore, things are not related to quantities[24] in just any way; rather, when they are related to them, this happens because a quantifiable substance is measured relative to some other substance. That other substance is measured

23 What follows is a paraphrase of the division outlined by Avicenna in *Shifāʾ, Manṭiq, Maqūlāt*, 84.5–86.12.

24 Read *kammiyyāt* instead of *kayfiyyāt*.

either by the measure of it in itself (*dhāt*) or by the measure of one of its attributes (*ṣifāt*). And a proof has already been given indicating that none of the attributes of body has a measure that differs from the measure of the body, with the sole exception of motion. For if body is what measures something else by the measure of itself, this happens because it is a container for [what it measures], or because it is contained by [what it measures]. But if it measures something else by the measure [273] of its motion, this amounts to measuring [something] by time. Thus the relation to quantity must be to the container (*al-ḥāwī*) or to time. If the former, then it must either be a relation to a container that does not move along when the thing moves—and this is "where"—or to one that does move along, and this is possession. As for the relation to time, this is "when." It has then been established that the categories that derive from the relation to quantity are the where, the having, and the when.

As for the relation to quality, you should know that not every quality puts the substance in a relation to another substance, but only a quality that arises through a relation of this [substance] affecting that one. This being so, the state in which the quality is brought about is the category of being acted upon, while the state from which the quality arises is the category of action. This is what the Master took the trouble to explain the restriction [of the categories to only ten]; yet at the same time, he recognized how poor and unconvincing it is.

[T23] Al-Rāzī, *Sharḥ ʿUyūn al-ḥikma*, vol. 1, 96.3–98.5

[*another systematization of the categories, based on Avicenna's* Dānishnāma]

I say: if existence does not accept non-existence, it is God the exalted. He is the necessary in itself. Existence that does accept non-existence is the contingent in itself. Now, this may be either not in a subject—and this is a substance—or in a subject—and this is an accident. [...]

[97.6] The accident may (a) require division, (b) require a relation, or (c) require neither division nor relation. (a) The first is quantity. It is either such that its parts share a single boundary, which is continuous quantity; or not, which is the discontinuous quantity. Continuous quantity may be something that elapses without being stable, and this is time; or it may be enduring and stable, and this in turn may is either accept division along a single dimension, which is

the line, or along two dimensions, which is surface, or along three dimensions, and this is body (*jism*).[25] As for discontinuous quantity, it is number. (b) When it comes to the accident that requires a relation (*nisba*), none of the predecessors offered a reasonable account concerning its restriction to a limited number of sub-divisions. In my view, the best thing here is to suffice oneself with using induction (*istiqrā'*). So: one of them is the relation the thing to its place: this is the "where." A second is the relation of the thing to its time or that which serves as a kind of vessel (*ẓarf*) for its time: this is the "when." A third is relation (*iḍāfa*), like fatherhood and sonship. A fourth is one thing having an effect on another,[26] which is acting. A fifth is a thing's receiving an effect (*athar*), which is being acted upon. A sixth is one thing's being surrounded by another, insofar as the latter moves along with the former: this is a possession. A seventh is a property that is attained by the body due to relations that arise between its parts, and due to relations that arise between these parts and external things: this is position. (c) As for as the accident which requires neither division nor relation, it is quality. It may be among the accidents that are perceptible through one of the five senses; if these are stable and disappear only slowly, they are called affective qualities (*infiʿāliyyāt*); but if they are weak and disappear quickly, they are called affections (*infiʿālāt*). Or it may be among the accidents that are proper to souls in themselves.[27] If [such an accident] is stable, it is called a disposition (*malaka*), whereas if it disappears quickly, it is called a state (*ḥāl*). Or, it may be a powerful tendency to receive [external influence], which is incapacity (*lā-quwwa*); or not to receive [this], which is capacity (*quwwa*). Or it may be an accident that differs from these [98] types. This, they claimed, is the quality that is proper to quantity, either to continuous quantity, like being straight or curved; or to discontinuous quantity, like being even or odd.

This then is the upshot (*ḥāsil*) of what has been stated [by other philosophers] concerning the ten categories, namely substance, quantity, quality, relative, where, when, position, possession, acting, and being acted upon. They claimed that these ten are the highest genera of [all] contingent things.

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25 As MS Leiden Or. 712 reveals, the printed edition skips here an entire line: *wa-huwa immā an yaqbala l-qismata fī imtidādin wāḥidin wa-huwa l-khaṭṭu aw fī imtidādayni wa-huwa l-saṭḥu aw fī thalāthi imtidādātin wa-huwa l-jismu.*

26 Read (with MS Leiden Or. 712) *taʾthīru l-shayʾi fī l-shayʾi* instead of *mā bihī l-shayʾu fī shayʾin.*

27 Read (with MS Leiden Or. 712) *al-mukhtaṣṣatu bi-dhawāti l-anfusi* instead of *bi-dharrāti l-anfusi.*

[T24] Al-Ṭūsī, *Sharḥ al-Ishārāt*, vol. 1, 190.7–191.3

[***Avicenna's verdict on the uselessness of the categories in logic is too harsh***]

I say: [Avicenna] opposes the other logicians. For their predecessor the First Teacher [sc. Aristotle] opened his teaching with an account of the ten categories (*maqūlāt*), which are the genera of genera (*ajnās al-ajnās*). In his book entitled *The Categories* (*al-qāṭīghūrīyās*), he indicated their meanings (*maʿānī*) and properties (*khawāṣṣ*) in the well-known manner that is suitable for beginners. He made [the categories] something like a postulate (*shibh muṣādarat*) of this science [sc. logic], not a part of it. The majority (*al-jumhūr*) followed him in this, and indeed in their explanations even added to it. Now, there is no doubt that an investigation of this is not among the logical inquiries. Still, the verdict [191] that—with regard to their being important or unimportant for this science—an investigation of them has the same status as an investigation of the intermediate and lower genera, departs from fair judgment (*inṣāf*). For whenever the logician applies his rules he certainly needs [knowledge of the categories] for the sake of hunting for definitions and acquiring premises.

[T25] Al-Ṭūsī, *Asās al-iqtibās*, 34.5–12

[***the categories can be useful within logic***]

The founder of logic [sc. Aristotle] opened this science by presenting an account of the ten highest genera which are called the ten categories (*maqūlāt*). The later scholars are of the opinion that—since a specification of the natures of universals, whether they are high or low, and a pointer to the concrete existents, whether they are substances or accidents, has no connection to the discipline of logic; and since it is not up to the logician to undertake a verification of such issues—the treatment of these investigations within pure logic (*dar manṭeq-e maḥḍ*) amounts to deviation and forced effort (*takallof*). Nonetheless, there can be no doubt that the art of defining and the art of acquiring premises for syllogisms are impossible without conceptualizing the categories which are the highest genera, and without differentiating each category from all other categories. Moreover, acquaintance with this discipline (*fann*) is useful for the capacity to adduce, in the realm of any issue, apt examples and specimens with an ease which only comes about by the explication of these [categories]. Hence, in this respect the points (*nokat*) and rules (*qavāʿed*) of this discipline were presented by way of tradition and transmission (*naql va-ḥekāyat*) as an instruction for the beginner. Still, some-

one who seeks verification itself shall refer to the books written by scholars of this discipline [sc. the discipline to which the *Categories* would properly belong].

[T26] Al-Ṭūsī, *Asās al-iqtibās*, 36.14–20

[***said of vs. present in***]

However, both [kinds of] subjects (*mawḍūʿ*) share in the common [feature] that both are described by an attribute: one through that which exists in it (*dar ū mawjūd bovad*), and the other through that which is said of it (*bar ū maqūl bovad*). Some [scholars] have attempted to explain both [kinds of] subject with a single description, saying: "subject" is whatever is described by an attribute that is not both constitutive of what is described and extrinsic to its essence. In other words, if it is constitutive of the described [essence], then it will not be extrinsic to it, but if it is extrinsic to it, it will not be constitutive of it. For instance man or animal for the white, and body or matter for blackness, but not like matter for form.

[T27] Al-Ḥillī, *al-Jawhar al-naḍīd*, 23.3–8

[***logic deals with secondary intelligibles, but the categories can still be useful for logic***]

I say: having finished the investigation of the five predicables (*maqūlāt*), which apply to these ten categories (*maqūlāt*),[28] he began to investigate the latter, even if this [investigation] does not pertain to the discipline of logic. For the subject-matter of logic is the secondary intelligibles, which apply to the primary intelligibles. So how could one investigate the primary intelligibles as if they were part of this discipline? That would be circular. Rather, [the categories] may be investigated in [logic] as an auxiliary means to obtain genera and specific differences. Hence, they are helpful for finding that which is defined and that which is concluded (*istinbāṭ al-maḥdūd wa-l-mustantaj*), even if they do not pertain to this discipline.

28 As this remark reminds us, *maqūlāt* literally means "things said," which is why it can be used of both the Porphyrian predicables and Aristotle's categories.

[T28] Al-Ḥillī, *al-Jawhar al-naḍīd*, 23.9–13; 31.11–16

[***the relevant question is whether substance and accident are two highest genera***]

Now that you have come to understand this, we say: the highest genera, under which the all [other] genera are subsumed, are ten. These are the categories that will be discussed in this chapter. One of them is substance. There was disagreement about whether or not it is a genus. Most of the ancients held that substance was a highest genus, because its individuals partake in it, cannot be realized without it, and [partake] in it equally, and these are the properties of a genus. Later scholars, however, denied that it was a genus on various grounds. [...]

[31.11] *I say*: these ten categories are the highest genera, and there is no [highest] genus apart from them. Gaining knowledge of this is one of the most difficult issues. One of these ten is substance, and the other nine accidents. "Accident" holds true of them the way an accident applies to its subject (*maʿrūḍ*), not the way a genus applies to its species. For the meaning of "accident" is that it applies accidentally to something, this being the relation of the accidental to its subject. This is posterior, whereas the part is prior. And since for the most part we know the true natures (*ḥaqāʾiq*) of the categories, while having doubts about whether they are accidents, accident is not a genus.

CHAPTER 6

Essential and Accidental Predication

Avicenna's essentialism has rightly been a focus of recent secondary literature on Avicenna,[1] and that focus was anticipated in the 12–13th centuries. The basic idea is familiar from Aristotle: the features of things are divided into "essential (*dhātī*)" and "accidental (*ʿaraḍī*)," with the former being, roughly speaking, the features that a thing of this sort must have, while the latter are features that a thing of this sort may or may not have. Thus a human is essentially alive and rational, but accidentally bald, male, or in Germany. Non-substances can also have essential properties, for example it is essential to blackness that it be a color. Essential properties are vital in Avicennan epistemology because these are the properties that are admitted in scientific demonstrations: following Aristotle, there is no demonstration of that which is accidental. In Avicennan metaphysics too, essence (*dhāt*) plays a vital role, as the complement of existence (*wujūd*). The essence makes each thing to be the sort of thing that it is, but (except in the case of God) this does not guarantee that the thing exists, so existence needs to be bestowed upon the thing by an external cause.[2] So when we say that essential features "must" belong to their subjects, we mean in more technical terms that these features must be predicated of their subjects whenever they exist [T40]. By contrast an accidental feature might come and go in the same subject.

Another way to think about the essential, which is easily suggested by an alternative Arabic term for essence, *māhiyya* (rendered here as "quiddity"), is that essential features may be offered in response to the question "what is it (*mā huwa*)?" According to Avicenna, one should reply to this question in terms of species membership, because this picks out the essence as a whole, or what is sometimes in our texts called the "complete quiddity." Thus, when asked what Zayd is, one should say, "he is a human" or, substituting in the definition, "he is a rational animal." Likewise, al-Sāwī argues that one should respond with the genus or specific difference, thus replying "he is an animal" or "he is rational,"

1 For instance F. Benevich, "Avicennian Essentialism," *British Journal for the History of Philosophy* 30:3 (2022): 244–279; idem, *Essentialität und Notwendigkeit: Avicenna und die Aristotelische Tradition* (Leiden: 2018); R. Strobino, "Per Se, Inseparability, Containment and Implication. Bridging the Gap Between Avicenna's Theory of Demonstration and Logic of the Predicables," *Oriens* 44 (2016): 181–266.

2 See further our chapter "The Essence-Existence Distinction" in the volume on *Metaphysics and Theology*.

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if and only if one is asking about what something shares with other things or what is specific to it [T6, T7]. By the time this approach to the essential based on the question "what something is" reaches al-Kātibī, it has effectively replaced the traditional Aristotelian division into the essential and accidental attributes [T66]. But Abū l-Barakāt suggests a looser approach to answering this question [T9]. One can name a "part" of the essence in answer to "what is it?" rather than supplying the whole essence. It all depends on the context—this is perfectly in line with Abū al-Barakāt's conceptualist approach to essentiality, which will emerge later in this chapter.

Avicenna recognizes more than one kind of "essential" predicate [T1], so that there is a terminological ambiguity involved in calling a feature *dhātī*. (Fakhr al-Dīn al-Rāzī offers a long list of different possible meanings for *dhātī*, some of which actually don't correspond to the "essential" at all [T18], cf. [T73].) Among predicates that are essential, some are "constitutive (*muqawwim*)" of the essence, which is to say that they are components of what it is to be a thing of the relevant sort. The parts of a definition, like "rational" and "animals" for "human," would be among the constituents, as would higher genera like "substance." Other predicates are essential because they follow from, or are implied by, what the thing is; such a predicate is called by Avicenna a "concomitant (*lāzim*)." As al-Rāzī explains, concomitants are not just things that happen to hold true of a subject by necessity. Otherwise, we would encounter what may be referred to as the issue of "irrelevance." Al-Rāzī's example is "So long as humans are rational, donkeys are braying." Rather, real essential concomitants need to be required by the nature of their subject [T19, T30].

As Bahmanyār says, this kind of concomitant can also be called an "essential accident" [T2], a traditional Aristotelian notion. The authors of our period are interested in Aristotle's approach to essential accidents as predicates whose definitions must mention their subject, and in Avicenna's critique of that approach [T33, T49, T62]. A standard example of an essential concomitant or essential accident would be that "shape" and "three-sided" are constitutive for "triangle," whereas "having internal angles equal to two right angles" is a concomitant of triangle. Frequently a spatial analogy is used to express the contrast: constituents enter into, or are "inside (*dākhil*)," the essence, whereas concomitants are extrinsic to or "outside (*khārij*)" it. Similarly, one can say that constituents are "parts" of the essence whereas concomitants are not.

Here one might wonder whether the essence itself is, strictly speaking, "essential." While the constituent and concomitant predicates are essential in virtue of or in relation to the essence, one could argue that the essence cannot be like this since it would have to be essential to itself. Our post-Avicennan scholars try to avoid this difficulty, either by means of terminological stipula-

tions, or on the grounds that the essence is essential for individuals to which it belongs [T5, T10, T29, T41, T45, T67, T76]. We'll return to this issue below.

Notice that a concomitant predicate satisfies one of the rough-and-ready criteria for essentiality we have mentioned, but not the other: concomitants do always belong to a thing whenever it exists, but they are not good answers to the question "what is it?" The first criterion, which concomitants do satisfy, may be called "inseparability." But inseparable in what sense? If P is essential to S, this at least means that S is never *in fact* without P. But does it also mean that P is *conceptually* inseparable from S, in the sense that whenever we reflect on S and P, we will just see without further ado that P belongs to S? Avicenna's position is that *immediate* or *proximate* concomitants are inseparable in the latter, conceptual sense [T1]. This means that it is "self-evident" that these kinds of essential predicates belong to their subjects [T21, T40, T60, T79]. If by contrast P is concomitant to S by way of a mediating feature, then P's necessarily belonging to S may escape notice.

A problem arises here, which attracted particular attention from al-Rāzī. Suppose that P is a concomitant of S, and that Q is a concomitant of P, so that it belongs mediately to S. An example might be: "able to enjoy silent comedies" (Q) is concomitant to "capable of laughter" (P), which is in turn concomitant to "human" (S). If immediate concomitance implies self-evidence, then *all* concomitant predicates should be immediately obvious, since whoever grasps S should grasp Q, and whoever grasps Q should grasp P. But this is implausible, for at least two reasons. First, it is just not what we experience. We often need to do some inquiry to discover concomitant attributes that are not immediate. Second, there is the threat of an infinite regress, if there are always further concomitants for each concomitant.

The problem can be solved by saying that we do not always *attend* to each additional concomitant [T21, T61]. If we were to reflect on Q as well as P, we would see that Q must also belong to S. But often, we only think explicitly about a first-order concomitant (like P) without going on to ponder what second-order concomitants (like Q) may belong to it in turn. The regress can furthermore be blocked by asserting that it is simply false that things have an infinity of essential concomitants, at least the real ones (*ḥaqīqiyya*) [T22]. It is also worth noting that there is no regress of concomitance as such, whereby P's concomitance to Q would itself supposedly be another concomitant distinct from both P and Q [T20, T74].

Nor do essences have an infinity of *constituents*, for instance, an endless number of specific differences [T23]. We surely would want to avoid this anyway, regardless of worries about a regress, since it would make essences unknowable [T31]. Happily, it can be ruled out on the ground that constituents

are, as already mentioned, in a way "parts" of the essence, and nothing can arise from an infinity of parts; again, see [T31] with response at [T48]. Al-Abharī offers a caveat here, namely that in the mind at least, one could entertain an indefinitely large number of concomitants [T56]. His nice example is that it is concomitant to "two" to be half of four, a third of six, and so on. To this we may add al-Ṭūsī's observation that the concomitants may be *potentially* infinite [T59], since in the mind one would have to grasp each concomitant feature of "two" in turn, rather than grasping them all at once. Thus neither thinker suggests that there could be an actual infinity of concomitants in extramental reality.

Thus, constituents are "parts" of the essence. Al-Rāzī is happy to think of them this way; indeed he goes so far as to claim that the *best* way to think about essential features is as "parts" of the essence [T16], though he does also admit the possibility of simple, and thus partless, quiddities [T27]. This seems to show that constituents are not "attributes (*ṣifāt*)" of the quiddity, since a "part" is not the same as an "attribute" [T14]. But al-Kātibī rejects this, on the grounds that we may need to attribute or ascribe a part to a quiddity to make it known [T64]. The idea that constituents are "parts" of the essence raises some further epistemological issues. The orthodox view of the Avicennian logic is that knowing the essence presupposes knowing all its constituents [T1]. After all, how can one know a whole if one fails to know some of its fundamental parts? Indeed our knowledge of the constituents is arguably *prior* to our knowledge of the essence, just as parts are prior to the whole [T4, T70].

This possibility is widely discussed in our texts [T15, T35, T54, T65, T72, T77], in terms of a contrast between knowledge that takes place "inclusively (*ijmālan*)" and knowledge in "explicit detail (*tafṣīlan*)." We have "inclusive" knowledge when we know a whole without having analyzed it into its parts and grasped how those parts are distinguished from one another, which is what would happen in "explicitly detailed" knowledge. Al-Rāzī mentions an evocative metaphor to show the plausibility of "inclusive" knowledge: you can know a piece of cotton fabric without knowing every thread [T35]. But he rejects that analogy and insists that constituent parts do need to be actually known in order to know the essence they constitute—which is not to be confused with knowing its *causal* prerequisites, since this is not necessary [T15, T28, T32]. (A similar point is made by al-Suhrawardī at [T38].) But later authors, like al-Abharī and al-Kātibī, do consider inclusive knowledge of an essence to be possible.

Let us now consider the interrelation between different kinds of constituents. As already mentioned these would correspond to the parts of a definition—genus and specific difference—and also higher genera. But al-Rāzī says that strictly speaking, the genus *insofar as it is a genus* is not a constituent, because "animal" plays a role of genus only relative to a species like "human"

[T24]. His point here seems to be that in itself, animal is (as we keep saying) a "part" of the quiddity; its generic nature is merely a logical status ascribed to it in the mind. Of course a given genus term will be a constituent for essences of several different species [T52], like animal for "human," "giraffe," and "cow." In each case it is prior to the essence for the aforementioned reason that parts are prior to wholes (though al-Abharī wonders whether this is true only metaphysically or also at the level of predication, at [T55]; further discussion on whether essential features function in the same way as parts and as predicates can be found at [T36, T39]). This raises a problem, though: wouldn't it be rather strange for the entirety of "animal" to be a part of both "giraffe" *and* "cow"? To avoid this, our authors often speak of the "share" or "portion" (*ḥiṣṣa*) of the genus in a species, for instance that "portion" of "animal" that belongs to "giraffe" but not to "cow." This shows how far they take the mereological approach to constitutent terms.

In fact one might go even a step further in this direction, and wonder whether the genus is divided up into "portions" through its association with various specific differences. Much as, say, an individual human belongs to a shared species and is rendered a particular by individuating features, so a certain species belongs to a shared genus which is demarcated by a specific difference, which is extrinsic to that genus [T3] but essential to the genus insofar as it belongs to the relevant species [T8]. Higher genera are not "true species" because they have not yet received sufficient determination to correspond to a real essence; nothing has an essence that makes it just be an animal, without being an animal of a certain type [T69].

Another question posed here is whether the specific difference is a *cause* for the genus, an idea that can be found in Avicenna. The Avicennan orthodoxy in this period is presented as the notion that the specific difference causes the genus *in existence*, but does not cause it *in itself*, or in its essence [T3]. In general, not everything that is required (or even constitutive) for the existence of something is required for that thing to be what it is. For example blackness needs a body as subject if it is to exist; but that subject is not part of the definition or essence of blackness [T37, T76, T78]. Applying this to our problem, we can say that the genus in itself, even the "portion" of the genus that is contained in a species, is independent of the specific difference. Animality is already something in its own right, as indeed it must be if it is prior to the essences it constitutes, for instance humanity. But specification by "rationality" is a necessary condition for "animality" (or the relevant portion thereof) to *exist*, for instance as part of the humanity that belongs to Zayd. In this sense only, the specific difference is a cause for the genus. As al-Rāzī puts it in [T34], specifying the genus and making it subsist "come together." Yet al-Rāzī denies the causal dependence of genera on specific differences in at least some cases.

For instance, corporeality is not dependent on the specific differences of living beings even in terms of its own existence, since the bodies of living beings remain bodies after the living beings perish [T25, T26]. Al-Rāzī's position provoked extensive discussion, as exemplified here in [T47, T51, T53, T56, T57, T58, T63, T75].

The reason to insist that genus is ontologically dependent on specific difference is to distinguish between real essences and accidental compounds. In the case of individual humans who have accidental attributes making them distinct, the essence of those humans does not depend on those accidents. Socrates would retain a human essence even if all of his individuating features were different. By contrast, if we were to take away rationality, Socrates's animality would not remain [T3].[3] As al-Āmidī helpfully explains, that is because the genus of animality is caused to exist by rationality, whereas Socrates' human essence is not caused to exist by his accidents, but ontologically prior to them [T46]. So regarding the abovementioned question whether essences themselves are essential for anything at all, the Avicennians argued that they are indeed essential for the individuals, unlike their accidental features.

This entire project of distinguishing between real essences and individual accidental compounds was undermined by the conceptualist approach of Abū l-Barakāt al-Baghdādī [T10, T11, T12, T13], echoed by al-Suhrawardī [T41, T42] and al-Rāzī [T29]. Abū l-Barakāt says that *any* predicate becomes "essential" to an object when that object is considered in the right way. Just insofar as I am bald, for instance, baldness would be essential to me. After all it satisfies both of our criteria for essentiality, as baldness belongs to bald-me whenever bald-me exists, and would constitute what it is to be bald-me. Therefore, the accidental attributes of particular individuals are no less essential to them than their essence. This of course threatens to break down the contrast between essential and accidental features completely. Or rather, every feature will be essential from some point of view and accidental from another: rationality is essential to me insofar as I am a human, but accidental insofar as I am an animal; baldness is essential to me insofar as I am a bald thing, but accidental insofar as I am human. Even existence, says Abū l-Barakāt, is essential for Zayd, when we consider him just insofar as he exists [T10]. This conceptualist approach to essentiality looks to undermine Avicenna's essentialism, and with it his whole epistemology and metaphysics! Happily, there is a way out. We should distinguish between essential features that belong to things in virtue of their real, extramental essences, and features that become essential to them only from

3 See further Avicenna, *Ishārāt*, 54.1–11.

some conceptual point of view; these could even include negative properties, as noted by al-Rāzī at [T17]. Another way to put the same point is that, if we build an "aggregate" from a real essence plus a real accident, like humanity-plus-baldness, the correct answer to the question "what is it?" will correspond to the real essence within the aggregate—a point Abū l-Barakāt is willing to accept [T12]. That is, if someone is asked what I am, they should say "human," not "bald human" or "male human" [T42], [T43], because the unity of the accidental aggregate is "merely conceptual" [T50, T53, T58, T71].

A related question, already raised by Bahmanyār in [T3] and then considered in a number of our texts, is whether individuals as such have essences. Is there an essence of Zayd, as well as an essence of Socrates? On an Avicennan view the answer will be "no," given that Zayd is just an aggregate of humanity (the real essence) plus some individuating characteristics (which are really accidents). Al-Rāzī, however, replies "yes" [T29]—fully in line with the later accusations against him as failing to recognize a difference between real and merely conceptual compounds, as just discussed. Earlier, we drew an analogy between the genus-specific difference relation and the species-individuating feature relation. But if it is right that individuals as such have no essences, there is an important disanalogy between these two cases. When you determine a genus with a specific difference, you get a species corresponding to a real essence; when you determine that species further by adding accidental, individuating features, you get a mere aggregate. The very same thinkers in our period who shared al-Rāzī's worries about Avicenna's approach to defining what is essential for the individuals (namely Abū l-Barakāt [T10], al-Suhrawardī [42], Bābā Afḍal [44], and Ibn Kammūna [T67]) still emphasised that only real essences, such as being a human, are essential for individuals, whereas their accidental features are not (Abū l-Barakāt [T12, T13], al-Suhrawardī at [T42], Bābā Afḍal at [T43], Ibn Kammūna at [T68]).

Texts from: Avicenna, Bahmanyār, al-Sāwī, Abū l-Barakāt al-Baghdādī, Fakhr al-Dīn al-Rāzī, al-Suhrawardī, Bābā Afḍal, al-Āmidī, al-Khūnajī, al-Abharī, al-Kashshī, Naṣīr al-Dīn al-Ṭūsī, al-Kātibī, Ibn Kammūna, Ibn al-Nafīs, al-Samarqandī, al-Ḥillī

[T1] Avicenna, *Ishārāt*, 46.3–50.15

[*definition of the essential*]

Among the predicates some are essential, some concomitantly accidental, and some separately [accidental]. We begin by defining the essential. *You should*

know that predicates include those that are constituents of a subject. By "constituent," I do not mean a predicate that the subject requires in order that its *existence* is realized, such as human's being born, created, or originated; or blackness' being an accident. Rather, I mean a predicate that the subject requires in order that its *quiddity* is realized. It is intrinsic for the quiddity, being a part of it. For instance, being a shape for a triangle, or corporeality for a human.

[***conceptual inseparability of essential predicates***]

This is why, in conceiving body as body, one does not need to rule out the negation of its being created—insofar as one conceives of it as a body. One does, by contrast, need to rule out the negation of being a shape from triangle, in order to conceive of it as triangle. Even though this is not an exclusive way to distinguish [essential predicates], and actually some concomitants, which are not constituents, are characterized in the same way (as you will learn), still in [47] this place it is a distinction [we give to mark out the essential predicates].

[47.4] *You should know* that everything has a quiddity. It is realized as existent in concrete individuals, or as conceptualized in the mind, while its parts are present together with it. [...][4]

[47.15] Hence, all constituents of the quiddity are intrinsic to the conceptualization whenever we conceive of a quiddity, even if they do not come to mind [48] spelled out in explicit detail (*mufaṣṣala*), just as many things we know do not come to the mind. But when they do come to our the mind, they are represented [as belonging to the quiddity].

[***essential constituents of individuals***]

The essential [predicates] of a thing, according to this place in logic, are these constituents. For the fundamental nature (*al-ṭabīʿa al-aṣliyya*), in which there is only distinction in number, for instance humanity, is constituent for every individual that falls under it. Each individual is distinguished with respect to [the nature] by specific properties belonging to it. So [that nature] also is essential: this is the constituent.

[***concomitants***]

As for the non-constituent, concomitant [predicate]—which is properly called the "concomitant (*al-lāzim*)," even though the constituent is also "necessary

4 For the passage omitted here see [T1] in our chapter "The Essence-Existence Distinction" in *Metaphysics and Theology*.

(*lāzim*)"—it is that which accompanies the quiddity without being a part of it, for example the fact that the triangle's angles are equal to two right angles. This and similar [predicates] necessarily attach to the triangle, as shown by measurements. They do so, however, only once the triangle is constituted through three sides. If [the predicates] of this kind were constituents, then triangle, and whatever works like this, would be constituted from an infinite number of constituents.

[***immediate and mediate concomitants***]

If such [predicates] are concomitant in an immediate way, then they are known to be concomitants, and one cannot eliminate them in imagination (*fī l-wahm*) even though they are not constituents. If however there is an intermediary through which they are shown [to belong to a quiddity], one [must] *learn* them to be necessary [predicates] through it. By "intermediary," I mean that which is connected to the expression "because," such that one can say [49] "because it is such-and-such." If this intermediary is a constituent for something, then the concomitant is not a constituent for it, since the constituent of a constituent is itself a constituent. Rather it too will be a concomitant [of the thing's essence]. If it requires a [further] intermediary and this regresses infinitely, then it will not be an "intermediary." If however it requires no [further intermediary], then in that case it is a concomitant whose concomitance is obvious, without any [further] intermediary. But if the intermediary is a prior concomitant, and it requires a further concomitant or constituent for mediation, without ending in an immediate concomitant, then again we have an infinite regress. So there is no way around having an immediate concomitant. It has been already explained that it cannot be eliminated in imagination. So pay no heed to anyone who says that whatever is not a constituent can be eliminated in imagination (for example that every number is either equal to another, or unequal to it).

[***separable predicates***]

As for predicates that are neither constituent nor concomitant, these are all predicates that can be separated from the subject, whether quickly or slowly, with ease or difficulty, such as human's being young or old, standing or sitting.

[***ambiguity of "essential" and "accidental"***]

[50] Just as the constituent is called "essential," whatever is not constituent, whether it is concomitant or separable, can be called "accidental." Among [these predicates] are those that are called "accident," as we will explain. But in a different place within logic one can also say "essential" and mean something else by it, namely the predicate that attaches to a subject in virtue that subject's

substance and quiddity. For example, what attaches to measures or their genus in terms of correlations and equalities, or [what attaches to] numbers in terms of being either even or odd, or to animal in terms of being either healthy or ill. This division of the essential is specifically referred to as "essential accidents"; they gave the example of "snub" for nose.

[***primary predication definition of the essential***]

One might describe the essential in such a way as to encompass both approaches: whatever is different from these essential [predicates] is such that it attaches to a thing in virtue of what is extrinsic to that thing, and is either more general than it, as motion attaches to the white, since it attaches to it only because it attaches to body, which is a more general idea than [the white]; or more specific than it, as motion attaches to the existent, since [motion] attaches to it only because [the existent] is a body, which is a more specific idea than [the existent]. The attachment of laughing to the animal is similar, since it attaches to [animal] only because it is a human.

[T2] Bahmanyār, *Taḥṣīl*, 11.21–12.6

[***essential accidents in the* demonstration**]

As for essential [predicates] for which the subject enters into their definition, like being even for being two, [12] or the triangle having angles equal to two right angles, we will describe them in the *Demonstration*. This kind of essential [predicates] is the converse of the first class [i.e. constituents], since human follows upon being an animal, is its effect, and is posterior to it. Here by contrast, the opposite is the case: being even follows upon being two, and being equal to two right angles follows upon triangle, and is posterior to it. But in both cases we are unavoidably dealing with *attributes* of something. They are called "properties (*khawāṣṣ*)," "essential accidents," "concomitant accidents," or just "concomitants." A concomitant may sometimes flow from the essence of that to which it is concomitant, like being even from being two, or from something extrinsic, like the existence of the celestial sphere.

[T3] Bahmanyār, *Taḥṣīl*, 19.17–20.17; 21.7–13

[***the relation between genus and specific difference***]

You should know that the genus is not at all a genus for the specific difference, nor is the specific difference a species for the genus; otherwise, it would need

another specific difference. Rather, the specific difference is a feature extrinsic to the nature of the genus. The rational is not an animal that possesses rationality. Rather, it is [just] something that has reason: it is [extrinsically] necessary that this thing be an animal. Now, the animal [20] that has reason is human [not just "rational"]. If animal were intrinsic to the meaning (*maʿnā*) of the rational, then saying "rational animal" would be tantamount to saying "animal is animal that has reason," since that which has reason and the rational are one and the same.

When the genus is predicated of the specific difference, this is like when the common accident that is concomitant to something is predicated of it, without being intrinsic to it. Rather, it is like matter for specific difference. The specific difference's relation to it [in its turn] is in a way as a relation of property which exists in some. However, the specific difference establishes [the genus] in actuality. Even though it is not intrinsic to its quiddity and definition, it is intrinsic to the fact that it is (*anniyya*). By this we mean that it is constitutive of the genus *insofar as it exists*, not insofar as it is realized as a genus, just as with many other causes.

[***the relativity of the notion of species***]

The relation (*nisba*) between animal and *this* animal, insofar as it is a certain animal, and without considering the rationality in it, is the relation of species to individual. It is not a genus for it; it is a genus only for that which is considered as having rationality in it. Likewise, the rational, with respect (*bi-l-qiyās*) to *this* thing that is rational, not taken together with being-an-animal, is like a species for it, not like a specific difference. Rather it is a specific difference only for the animal as such. "Capable of laughing" is like a species for *this* thing that is capable of laughing, insofar as it is not considered as a human. It only is a property of the human and of individual people. Likewise, the white too is like a species for *this* white, insofar as it is a certain white. And its being a common accident is simply the fact that it is a common accident for the thing which is a subject for its being this white, not for this white insofar as it is this white.

[***individuals as accidental compounds vs essences***]

[21.7] One individual is distinguished from another through attributes (*awṣāf*) whose mutual contradiction does not hinder that individual from [falling under the same] species, for instance white human as opposed to black human. One species [in its turn] is distinguished from another species through attributes, such that if one imagines that some other attributes would arise for it,

then that species would not exist. Instead, some other species would exist, or neither that species nor its genus would exist. For an unqualified genus does not exist, just as animal without qualification does not exist. If the color in blackness transformed into whiteness, the "being a color" in whiteness would not remain the same as it was in blackness. In general, the cause which establishes individuality does not bestow the existence of that species of which this individual is an individual instance. Yet what establishes the species is the same as what establishes the genus.

[T4] Al-Sāwī, *Baṣā'ir, Manṭiq*, 37.3–12

[***additional constraint for essentiality: not just inseparable, but also prior***]

It is said that the essential is that which cannot be removed from a thing, either in existence or the imagination (*tawahhum*). But this is not sufficient to distinguish the essential from other [predicates], for there are concomitants that have no intermediary between them and the thing; instead they follow from the essence, as will be explained. Things like these cannot be removed from the subject of the concomitants, once the latter is stipulated as being real, either in existence or the imagination. Therefore the essential is specified by something else additional to this scope (*qadr*) [that has just been identified], namely that whenever it is grasped intellectually in relation to the thing [for which it is essential], it cannot be removed from it, *and* its conceptualization must be prior to the conceptualization of that for which it is essential. *Proof*: each thing has a quiddity which is compounded out of parts, and it can exist in concrete individuals only if its parts are existent and present together with it. The presence of its parts is their existing in the first place, and then remaining so long as the thing remains. If it can only exist in concrete individuals in this way, that is, such that its parts are prior to it essentially, not in time, then likewise it can exist in the mind only in the way it does in concrete individuals. For the knowledge of forms in the mind corresponds to the way things exist. Therefore parts are prior in conceptualization, just as they are in existence.

[T5] Al-Sāwī, *Baṣā'ir, Manṭiq*, 38.9–20

[***are essences themselves "essential"?***]

A terminological inquiry arises here: does the term "essential" encompass that which refers to the [whole] quiddity as well as the constituent, or does it refer

specifically to the constituent, so that what refers to the [whole] quiddity is not "essential"? This [second option would be plausible] because "essential" refers to something that has a relation to the essence. And it can have a relation only to something else, not to itself or to its own essence. The quiddity, though, is just the essence [itself], nothing else, so it is absurd[5] that it have a relation to the essence [as that would mean having a relation to itself]. Thus the name "essential" does not apply to it. [In other words] human is not essential for human; rather animal and rational are essential for it. Still, even though linguistic usage prohibits us from applying the term "essential" to that which refers to the quiddity, logicians nevertheless use this expression by way of secondary imposition. [This on the grounds that] they have agreed with one another that, whenever something universal relates to the particular instances to which it applies semantically, in such a way that if one were to imagine it being removed, then that particular thing would also be removed—meaning not that the particular is removed first, but that the universal is removed first, and thanks to its removal the particular is removed—then such a universal is "essential" in relation to that particular. This is regardless whether it is the true reality belonging to the particular, or an attribute that it needs for its essence. The relation of human to the individuals that fall under it, like Zayd and ʿAmr, has such a relation [to them]. Therefore [human] is "essential" for them, even if it does refer to their [entire] quiddity. Therefore "essential" is more general than "that which refers to the quiddity"; it encompasses the latter, in the way that the more general encompasses the more specific.

[T6] Al-Sāwī, *Baṣā'ir*, *Manṭiq*, 40.17–41.14

[***three types of answers to the "what is it?" question***]

What refers to the quiddity (*dāll ʿalā l-māhiyya*) is of three types.

First, what refers to the quiddity by way of pure specificity, for instance how "rational animal" refers to human being. You will learn later that this kind of reference is that of definition for what is defined.

Second, what refers only by way of sharing. It collects things that have different quiddities, yet share in certain essential features, and asks about their shared quiddity. For instance, when one asks about human, horse, and bull: "what

5 Reading *fa-muḥāl* instead of *fa-ḥāl*.

are they (*mā hiya*)?" Then, what serves as a good answer would be whatever refers to the perfection of the quiddity in which they share, namely animal. [...] [40.24] As for whatever is like "sense-perceptive" or "moving by volition," even though each of these is [extensionally] equal to "animal," so that whatever is an animal is sense-perceptive, and whatever is sense-perceptive is an animal, still it does not serve well as for referring to the quiddity. This is because "sense-perceptive," in its linguistic connotation, refers only to what has sensation; it does not refer to corporeality, except by way of an implication (*iltizām*), namely the mind's awareness that "sense-perceptive" is only ever in existence together with "body." [...] [41.4] As for "animal," it is the subject for a body endowed with soul, which engages in nutrition, growth, reproduction, sensation, and voluntary motion. Nothing prevents it from signifying that which is the sum of essential [properties] in which human, horse, and bull share. Let "animal," then, be that which refers to their [shared] quiddity.

Third, that which refers by way of both specificity and sharing. For instance, when one asks about a group made up of Zayd, ʿAmr, and Khālid, "what are they?" the answer is that they are humans (*nās*). Likewise, if one asks only about Zayd, "what (*mā*) is he?" and not "who (*man*) is he?" the answer will be that he is a human (*insān*). For the quiddity of Zayd on his own is the same as the quiddity in which he and other humans share. What is added to humanity in Zayd would be either accidents that come to him and then leave him, or concomitants, which accompany him from his first coming to be, due to the connection of some items that occurred accidentally to his matter, out of which he was created, or occurred in his mother's womb. Nevertheless, [concomitants are such that] in the imagination (*wahm*) one can suppose them to be removed, and that their contraries occur to him from the beginning of [his] creation, yet he will still be the same human (*bi-ʿaynihi*). The relation between humanity and animality is not of this sort: one cannot suppose that this animal remains one and the same, while supposing that humanity departs and horseness arises. Rather, in existence this animal is just this human.

[T7] Al-Sāwī, *Baṣāʾir, Manṭiq*, 42.11–18

[***real species vs relative species***]

It has been already explained that "what it is" (*mā huwa*) is either said, by way of sharing, of many things that differ in terms of their true realities, or it is said of many things that differ only in number. The first is called "genus," the second "species." One may also use the term "species" for each of the things that differ

in their true reality, and of which genus is said, for instance, human, horse, and bull, when "animal" is said of them. But "species" would here not be applied to the subjects in the same sense. In the second sense "species" is relative to "genus." Its definition is "the universal such that genus is said primarily both of it and something else, in answer [to the question] 'what is it?' by way of sharing." The first sense by contrast is not relative to a genus. Its definition is "that which is said of many things that differ only in number." To conceptualize it as something said of many things, there is no need that anything else more general is said of it.

[T8] Al-Sāwī, *Baṣā'ir, Manṭiq*, 44.14–45.8

[*how specific differences are essential for genera*]

You should know that, if the specific difference is connected to the nature of the genus, it constitutes it as a species, and it is essential for the nature of the genus, as for instance rationality constitutes animal as a species, namely human. However, it is not essential for the unqualified (*muṭlaqa*) nature of genus (like unqualified animal, in our example), since unqualified animality may be without rationality, and it is inconceivable that something be without its essential [predicates]. Instead, [rationality] is essential for the nature of the genus that is specified in existence, which is the animality of human, not the animality of any other species. For that animality is constituted as an occurring species only through rationality. Even though rationality is essential for that which it constitutes as a species, which is composed from animality and rationality, still it is essential for the [45] specified animality too, without [needing] to consider rationality along with it. For if [rationality] were essential only in relation to that which is composed from it and animality, there would be no difference between it and accidental [features], since the latter all are essential in that respect [i.e. in respect of accidental compounds]. After all, whiteness is essential for the white body, when one takes the body just insofar as it is white. And the ability to laugh is essential for the animal that can laugh, just insofar as it can laugh.

With this, you have learned that the way in which the specific difference is essential for the genus is different from the way it is essential for the species that it constitutes. Its essentiality relates to the two differently: whereas [its] relation to the species is intrinsic to the meaning of [the species, its relation] to the nature of the genus, which is a portion (*ḥiṣṣa*) of this species, is not intrinsic to its meaning. Rather, it constitutes [the nature of the genus] only in existence,

since if there were no specific difference, it is inconceivable that [the nature of the genus] could be constituted at all.

[T9] Abū l-Barakāt, *Muʿtabar*, vol. 1, 14.14–20

[*genera can also be given in answer to the "what is it?" question*]

Universals are stated in answer to the question "what is it?" One may state more than one of them regarding things that are one and the same as concrete individuals, with these predicates differing in terms of generality and specificity. For instance "body," "animal," and "human" are said of Zayd, ʿAmr, or Khālid. "Human" is said of them in answer to the question "what is it?," and animal too, however the latter in a more general way, since it said of them alongside horse, donkey, etc. "Body" too is said of them in the same way: it is [even more] general than saying "animal," since it is said of them alongside the [various] types of plants and minerals. Whatever is more general among [these predicates] is said of the more specific, in the same way as "body" is said of animal, and "animal" of human.

[T10] Abū l-Barakāt, *Muʿtabar*, vol. 1, 23.8–29.13

[*what is essential for individuals?*]

Then [certain philosophers] posed an objection to their own view on this topic [sc. how to define the essential], *saying*: what is the meaning of this, if the essential expressions are genera, species, and specific differences? What we understand by "essential" is a relative (*nisbī*) notion, and the relative can be related only to something else, not to itself. The essentiality of each genus and specific difference is understood in relation (*qiyās*) to a species. But in relation to what should we understand the essentiality of species? For species is not essential to both of them, nor to just one of them, that is, just the genus or just the species. Yet if we understand the essentiality of species in relation to individuals, such that "human" would be understood as essential for Zayd, then human must be either essential to Zayd insofar as he is a human—but then human is [again] essential to itself—or insofar as he is Zayd, who is individualized through his accidents and proper accidents, through which alone that individual is [himself]. But then those accidents and proper accidents would be as essential for him as humanity, given that this individual cannot be without them. Thus, the perfection of quiddity, which is what one is asking about insofar as one asks about an individual, as such, "what is it?," would not

be humanity. Thus their answer to the question "what is it?," [namely "human"], would not be sufficient, insofar as he is this individual, even if it is sufficient in as far as his humanity goes. Humanity would be like a genus for him, while his accidents and proper accidents would be like specific differences. In that case, there would be no species which would serve as a sufficient response to the specific question "what is it?" concerning the quiddity [of an individual], such that [the species] would be essential for [that individual]. This is a complete presentation of the doubt.

[***Al-Sāwī's solution: the essential is not relative***]

Next they came back with a solution to their own objection, *saying*: even though an expression of the essential conveys a relative understanding, according to linguistic usage, when we use it as a technical term, we do not mean [24] this. We mean by it simply that which is associated with the things it characterizes in the way mentioned above, namely that, when it is entertained in the mind together with whatever it characterizes, and is prior to it in conceptualization, then when it is eliminated, [the thing so characterized] is also eliminated.

But this statement is weak-minded, and for two reasons. *First*, after denying the point about relation, it now returns to what it sought to avoid. For it says, "that which is associated with the things which it characterizes in such-and-such a way," and it can be understood only as being related, and it is related precisely to that which it characterizes. Hence [the species] can only be essential for an individual. [...] [24.14] *Second,* even if we granted this, how can they hope to free the universal essential from relation? Its genus is "the intelligible," which is itself a universal, and this can be understood only in relation to something. For the universal can be grasped intellectually only for that existing multiplicity of which it is said, or could be said, in the case where the multiplicity is only imagined.

[***conceptualist solution: any universal predicate counts as essential to a subject grasped as such***]

[28.18] *As for the first doubt*, you have already learned the invalidity of what was said by way of solution, namely that it would lead back to the very same doubt. What [ought to] be said is this: "human" is essential for whatever has it as a universal [predicate]. As it is a universal [predicate] of Zayd and ʿAmr, it is essential for Zayd and ʿAmr. [This solution] is not invalidated by the objection that, if ["human"] were essential for Zayd insofar as he is a human, then ["human"] would be essential for itself. Even if Zayd had no attribute apart

from humanity, it would not follow that humanity is essential for itself, since "human" as a predicate is not the same as "human" as a subject: one is in the mind and the other is [extramentally] existent (*wujūdī*). Now, they might both be in the mind, as we will verify. Still, the predicate would not be the same as the subject; this would be so, even if one said that [the predicate] is essential for [the subject] insofar as it is a human. For [29] what is intellectually grasped (*maʿqūl*) of "sun," and whatever arises from it in the mind, is essential for [the sun] as concretely existent, as has been said. This kind of essentiality is not the same as the essentiality of animal for human, that is, in the sense that it would be a part of the latter's true reality. Furthermore, [the claim that "human"] is essential for Zayd insofar as he is an existing human is also true, since "human" is essential for the existing human, and is a part of what is intellectually grasped of it. And [the claim that "human"] is essential for Zayd, insofar as he is designated and recognized as Zayd, is also true, since whoever recognizes Zayd recognizes a human with such-and-such form (*hayʾa*) and description (*ṣifa*).

One might object in the latter two cases that accidental attributes would then also be essential:

As to the first, existence would be just as essential for Zayd as "human" is. *To this we say*: this is true and admitted, with no doubt or objection being raised against it. For an existing human, *insofar as he is existing*, existence is essential and is a part of what is intellectually grasped of him.

As to the second, those accidental forms, through which Zayd is recognized and designated as Zayd, would be essential for him. *To this we say*: this too is true, since they are parts of the true reality that is so recognized and designated, *insofar as it is so recognized and designated*. For whoever recognizes [someone as] a tall writing human has indeed made all three of these—human, tall, and writing—essential for him, just insofar as he is so recognized and designated.

[T11] Abū l-Barakāt, *Muʿtabar*, vol. 1, 67.19–22

[*nominalist essentiality*]

[Avicenna] said about [the essential] that it is "that which, when it is eliminated, the thing characterized by it (*al-mawṣūf*) is also eliminated." I would say [in addition], "insofar as it is described by it," whereas he says, "insofar as it is existent." Thus he interprets essentiality as involving existence. We by contrast

interpret it in terms of designation and meaning, because existence depends simply on the causes that necessitate the existent, nothing else.

[T12] Abū l-Barakāt, *Muʿtabar*, vol. 1, 32.19–33.4

[***nominal essentiality vs. objective substance***]

As for what is said in response to the question "what is it?," it differs depending on what the questioner is asking, and his intent in inquiring. (a) Sometimes one asks about the designated object insofar as it is so designated, and then the answer is a combination of whatever is meant and intended by the word, as one answers the question "what is human?" by saying "rational animal." Or one might ask about "writer": then [the answer would be] "one who has the power from which the act of writing proceeds." (b) But one may also ask about the designated object not insofar as it is so designated, but insofar as it is among existent things. Then the answer is the foundation (*al-aṣl*) and substance (*al-jawhar*) [33] of that designated object, which exists irrespective of the states and attachments in it. For instance, when one asks "what is it?" regarding the writer, who is an existing thing in that he is a human, just insofar as he is an existing thing, not insofar as he is a writer, then the answer will be that he is a human.

[T13] Abū l-Barakāt, *Muʿtabar*, vol. 1, 24.17–27.22

[***an Avicennan proposal about specific differences***]

Then [a follower of Avicenna] said elsewhere that the specific difference is not essential for the unqualified nature of genus, since e.g. animal can be without rationality. Nor does the essentiality [of the specific difference] amount to its being essential for that which is composed from it and the genus, since every accidental [attribute] is like that. For it is essential for whatever is composed from it and whatever else happens [to belong to it]. In that case, proper accidents would be specific differences: "capable of laughing" would be essential for "animal capable of laughing," just insofar as it is capable of laughing, while whiteness would be essential for "white body" just insofar as it is white. Instead, the specific difference is essential for the nature of genus specified for this species. That nature becomes what it is in actuality only thanks to the existence of the specific difference. For instance, unqualified "animal" has no persistent essence, but acquires the persistence of its essence (*thabāt al-dhāt*) and subsistence (*qiwām*) only through the specific differences. And the color that

exists in blackness is what it is due simply to the specific difference relevant for blackness. [25] This is how one ought to understand the essentiality of specific differences.

[*response*]

That then is the gist of what he said. But it is even more ridiculous than [his view on the essentiality of species]. His contrast between the nature of "unqualified genus" and that of "specified genus" allows him to rule out the essentiality of the specific difference for the unqualified [genus] but require it for the specified one. But how does he conceptualize it, or how can he even say this, given that he himself says that the nature of something, insofar as it is that nature, is distinct from its being considered as general or specified? For instance, the nature of a genus like "animal" becomes specified only thanks to that specific difference which is related to it as essential. "Animal" as such is neither general nor specific. It is specific only because it is *rational* animal, for example, as opposed to animal all on its own. Thus—back to where we started—"rational" is essential for "rational animal" in the same way as "white" is essential for "white body"; but this is precisely what he seeks to avoid. Or alternatively, ["rational"] might be essential for "animal" as such, that "unqualified nature of genus." But again, this is precisely what he seeks to avoid.

As for his claim that unqualified "animal" has no persistent essence, but comes to have persistence of essence and subsistence due to the specific differences—and also what he said about color and blackness—this would not give us to understand that "rational" is essential for "animal," nor "blackness" for "color," according to what he has taught and laid down concerning the meaning of "essential." It is not true that "animal" can be conceptualized as "animal" only when it is conceptualized as "rational." Rather, this would be the case only for "rational animal." To eliminate "rational" does not lead to eliminating "animal." There should be no confusion between it and "animal" that has been specified, since ["animal"] is what becomes specified through a specific difference, like "rational."

[***irrelevance of invoking existence***]

If however he means by this that ["rational"] is essential for the existing animal, that isn't right either. For existing animal too might be non-rational; it is only "rational animal" that cannot exist without being rational. So it winds up that "rational" is essential for "existing *rational* animal," as the phrase would indeed suggest.[6]

6 Literally, "and this is in accordance with what is heard."

As for his claim that the unqualified "animal" has no real essence, and that the persistence and subsistence of its essence are instead due to the specific differences, while this is true, it does him no good. For by "essential," he does not mean what is required for something to exist, or for the persistence of its essence and the subsistence of its existence. Rather, by ["essential"] he means what is required for the *conceptualization* of something, and the subsistence of its quiddity *in the mind*. Thus he said that [something is "essential"] so long as, when it is eliminated in the mind, that to which it is attributed is also eliminated; and [he said] that [the essential] cannot be conceptualized as being denied of [its subject]. But this cannot be the case for "rational" with respect to "animal." Otherwise, "essential" would here mean some particular thing that establishes existence and makes an essence persist (*tathbīt al-dhāt*). The meaning [of "essential"] will then be something other than what he laid down, and [26] "essential" will become an equivocal term. But he never says any such thing. [...]

[***different senses of "essential" and "accidental"***]

[26.19] When one applies the term "essential" to an attribute in order to distinguish it from another attribute, one distinguishes it by its close relation to the essence of something, to the exclusion of anything else. Just as far as what is understood by the term ["essential"], this [close relation] does not belong specifically to certain attributes to the exclusion of any others, even if it applies to some of them in a more suitable way. For instance, what one intellectually grasps from the essence of something is more appropriately [called "essential"] than a [mere] part of what is so grasped.

Likewise, "accidental" may be said to convey the understandings that are opposed to the [various] understandings of "essential." So anything that is in some way not essential, just insofar as it is not essential in this way, it said to be "accidental." That is why a given attribute of something can be essential [27] in one way and in a certain respect, but accidental in another way.

[***the essential as that which "establishes being" by accounting for difference***]

Along these lines, one may say of an attribute that establishes being (*al-ṣifa al-muqarrira li-l-anniyya*) that it is "essential," since it has a more proximate relation to the essence than accidents that are concomitant to it in existence. This is probably what they meant by making the specific difference "essential" for the generic nature to which it is attributed, for instance "rational" for "animal" which has it as an attribute, but not for the nature of the genus without qualification—just as they said. But this understanding of the term

"essential" is more remote than others, and it really ought to be called "constituent." […]

[27.7] The meaning of this "establishing" (*taqrīr*) and "constituting" (*taqwīm*) is that what is intellectually grasped of a genus does not become really existent in its intelligible nature alone. For example, body cannot exist as anything but corporeality; it can exist only in a defined amount, with a defined shape, and in a defined space, none of which need belong to it due to corporeality. And whatever need not belong to it does not render its existence possible. It is only some attribute additional to corporeality that makes [those features] necessary for [the body]. That attribute is the one that makes it possible for corporeality [actually] to exist, and establishes being (*anniyya*) for it. Since that [attribute] distinguishes the body to which it is attributed from any other [body], it is a specific difference (*faṣl*), even if other [attributes] that attach to it and follow upon it do share in [distinguishing the body], like specified shape or specified space. [This differentiating attribute] distinguishes itself from the others because it is the first to render the general specific, and to establish the existence [of the body]. It is the foundation (*aṣl*) in this [sc. making the body exist], and everything else follows upon it. It is that which, in the science, is known as "form in matter." […]

[27.17] These attributes are specific differences (*fuṣūl*) that turn genera into species. The true realities of species are completed by them. Their relation to species, in terms of what is grasped by intellection, is that of a part of the whole meaning to the entirety (*tamām*) of the quiddity. In this respect there is no difference between [the relation of the specific difference to the species] and the relation of whiteness to the white: both are "essential" in the sense that each of them is a part of the true reality of something, just insofar as it is that something. But its relation to genus is different from the way that [attributes like whiteness] relate to their subjects in existence, since whiteness does not *constitute* its subject, that is, does not establish being for the subject in a way that these attributes [sc. the differentiating ones] do.

[T14] al-Rāzī, *Manṭiq al-Mulakhkhaṣ*, 42.3–12

[***are parts of essences "attributes"?***]

A part of a quiddity is not an attribute for it, because an attribute inheres in [its] subject, and what inheres is posterior to that in which it inheres. So the attribute is posterior, whereas no part is posterior [to the whole]. Thus no part

is an attribute, nor vice-versa. Also because, if any part of the composite quiddity were attributed to [the quiddity] itself, then that part would be a part of the subject itself. But the subject is prior, and its part is prior to it, so something would be prior to itself twice over.

But it might be said, rejecting the premise that what inheres is posterior to that in which it inheres, "why can't the quiddity of each of those simple [parts] require that they inhere in that quiddity that is compounded from them, on the condition that [the quiddity] comes to be from [the parts]?" On this assumption, the essences of [the parts] would be prior to the essence of the composite quiddity, but their *inhering* in it would be posterior to the coming-to-be of the composite quiddity.

[T15] Al-Rāzī, *Manṭiq al-Mulakhkhaṣ*, 43.3–10

[***knowledge of the essential does not imply knowledge of all its parts***]

When the Master [sc. Avicenna] mentioned that the conceptualization of an essence must be preceded by the conceptualization of its parts, *he said*: those parts may not be known in explicit detail (*ʿalā l-tafṣīl*), but when they occur to the mind, they are represented in explicit detail. *But this calls for further inquiry*. For if every simple [part] of a composite quiddity is known then [each part] must be distinguished from any other in the mind. This is because, when we intellectually grasp two different quiddities, then we cannot fail to grasp their distinction from one another, at that very moment when we know both. If it is not known,[7] even as we know the essence, then this would undermine [the claim] that the conceptualization of an essence depends on the conceptualization of its parts. But this [latter claim] is necessarily known to be true.

[T16] Al-Rāzī, *Manṭiq al-Mulakhkhaṣ*, 44.2–15

[***progressively restrictive notions of the essential: the correct view is that the essential is the part of a quiddity***]

People have differed over how to interpret "essential." (a) Some interpret it as "that which the essence (*al-dhāt*) cannot lack." In this case, all concomitants of both existence and quiddity would be included under it. (b) Some interpret it

7 Reading *lam yakun maʿlūm* for *lam takun maʿlūma*.

in a more specific way, as "that which the essence cannot lack in respect of its quiddity (*fī māhiyyatihi*)." (c) Some interpret it in a still more specific way, as "that which cannot be removed from the quiddity." (d) Some interpret it in a yet more specific way, as "that which must evidently be affirmed [of the essence]." And we have already mentioned that a [feature] that is evidently affirmed of something is such that the mind cannot be aware of that thing, without being aware of this feature. This [interpretation] is more specific than the third one [i.e. (c)], because an attribute could be such that one is unaware of it while being aware of the subject of attribution, yet as soon as one is made aware that it belongs to the subject of attribution, the mind is unable to eliminate [the attribute] from [the subject]. (e) And some made it even more specific: "that which is a part of quiddity." These are the verifiers [i.e. those whose view is correct].

[T17] Al-Rāzī, *Manṭiq al-Mulakhkhaṣ*, 46.5–8

[***negative predicates can belong to essences only at the conceptual level***]

If composite quiddities are realized [in reality], none of their parts can be negative (*ʿadamī*), since the non-existent (*al-maʿdūm*) cannot be a part for something that exists. If however they are [merely] conceptual (*iʿtibāriyya*), e.g. "blind," "dark," or "ignorant," then they can [be negative]. Those privations are not anything particular in themselves; otherwise they would be real, and distinct from what is not them.

[T18] Al-Rāzī, *Manṭiq al-Mulakhkhaṣ*, 47.4–49.13

[***the ambiguity of*** **dhātī**]

The term *dhātī* may be applied to (a) meanings involving predication, and (b) to those where this is not the case. The former is said equivocally of eight cases:

(a1) It is said of whatever is predicated of an object (*bi-l-dhāt*), when the subject deserves more to be a subject [than the predicate], as when we say "human is white." The converse predication is accidental (*bi-l-ʿaraḍ*), as when we say "the white is human."

(a2) [It is said] of a feature (*waṣf*) that applies to something in reality (*ḥaqīqatan*), regardless whether it is due to its nature or due to something that compels [the feature] to exist in [the thing], as when we say "stone is moving on its own (*bi-l-dhāt*)" even if it is doing so through compulsion. The converse

predication is accidental, as when we say about a passenger on a ship that he is moving [that is, because he is moving, but not on his own].

(a3) [It is said] when something more general is predicated of something more specific, like "animal" of "human." The reverse predication is accidental. This comes close to the first definition [i.e. (a1)].

(a4) [It is said] of whatever has no mediation between itself and its subject, as when we say "surface is white". The accidental is then when there is an intermediary, as when we say "body is white" [that is, because the body has a surface, and the surface is white].

(a5) [48] [It is said] of that which does not come to the subject in a foreign and extrinsic way, but as something demanded by the nature of [the subject], as when we say "stone is moving down." The converse predication is accidental, as when we say "stone is moving up".

(a6) [It is said] of that which is such as never to be separated from something. The converse predication is accidental. It would seem that a stone's falling is among the accidental predicates, according to this interpretation.

(a7) [It is said] of that which is constituent for the subject, as has been explained at length.

(a8) [It is said] of a feature that attaches to the quiddity, neither due to something more general, as when we say "animal is moving," nor due to something more specific, as when we say "animal is capable of laughter." In the *Book of Demonstration* this is called an "essential accident (*ʿaraḍ dhātī*)." It may attach to [the subject] either (a8a) due to itself (*li-dhātihi*) or (a8b) due to something else. Either way, that which attaches is either more general, more specific, or coextensive. (a8a1) What attaches to [the subject] due to itself and is more general than it is like oddness for three. (a8a2) What attaches to [the subject] due to itself and is coextensive with it is like "the contingent is dependent." (a8a3) [49] What attaches to [the subject] due to itself and is more specific than it. This happens when something requires having as a feature one of two things, [but could have either,] and both are more specific than it. For instance "the existent" with respect to "one" and "many." (a8b1) What attaches to [the subject] does so because of [something else, namely] a feature that is coextensive with it, but is more general [than the subject] itself. (a8b2) What attaches to [the subject] due to [something else, namely] feature that is coextensive with it and also coextensive with the subject itself, such as "capable of laughter," which is predicated of "human" by means of "capable of wonder." (a8b3) What attaches to [the subject] due to [something else, namely] an attribute that is coextensive with it, but more specific [than the subject] itself, such as "laughing in actuality," which [attaches to human] due to the capacity for wonder, which is in turn coextensive with the capacity for reason.

As for those [uses of the *dhātī* when it is applied] not to predication:

(b1) It is said of something subsistent through itself (*qā'im bi-dhātihi*) that it "exists through itself (*bi-l-dhātihi*)," and of something subsistent through another that is does not [exist] through itself.

(b2) "Through the thing itself (*bi-l-dhāt*)" is said of something that is the necessitating cause for something [else], like slaughter for death. When lightning happens (*'araḍa*), or someone stumbles across a treasure, one does not say that it happened through the thing itself, but incidentally (*bi-l-ittifāq*).

[T19] Al-Rāzī, *Manṭiq al-Mulakhkhaṣ*, 50.5–9

[***problem of incidental concomitance***]

With regard to the definition of the extrinsic concomitant (*al-lāzim al-khārijī*), the Master [sc. Avicenna] said that it is what accompanies the quiddity without being a part of it. This however can be refuted by [the case of] that which is separable; unless one understands "accompanying" as always doing so. But even then, [the definition] is refuted by the case where one thing incidentally happens to be with another always, as when we say: "So long as humans are rational, donkeys are braying"; unless one applies [the term "concomitant" only to] that which accompanies always *and necessarily*.

[T20] Al-Rāzī, *Manṭiq al-Mulakhkhaṣ*, 51.2–12

[***what is the status of concomitance itself?***]

It is known necessarily that there are concomitants. *But it might be said*: if one thing is concomitant to another, then either (a) that concomitance (*luzūm*) is something negative (*'adamī*), which is absurd, since there is no difference between negative concomitance and negation of concomitance (otherwise there would be distinction between non-existent things, but distinction is proper to existence, so non-existence would be existence, which is a contradiction); or (b) [the concomitance] is something positive (*wujūdī*). In this case, it might be (b1) equivalent to the object that receives the concomitant, or to the concomitant. But that would be absurd, because we can intellectually grasp both of them while being unaware of this concomitance. For concomitance is a relation between two things; so it is posterior to both; so it is distinct from them. Or (b2) [concomitance might be equivalent] to something additional [to the pair linked by concomitance]. But this is also absurd, since if [concomitance]

is itself a concomitant, then its concomitance is [in its turn also] additional to it, yielding a regress. If on the other hand it is not a concomitant, then it may be supposed as eliminated, so that no concomitance remains; and then the [original] concomitant is no longer a concomitant, which is a contradiction.

Furthermore, if concomitance is truly [real], then the non-existence of what receives the concomitant will follow upon the non-existence of the concomitant. So concomitance would occur as a [relation] between two non-existents. But the attribute of non-existence cannot be real.

Response: here a doubt is raised about something that is known necessarily, so it does not even deserve a response.

[T21] Al-Rāzī, *Manṭiq al-Mulakhkhaṣ*, 52.15–54.2

[***conceptual inseparability of concomitants***]

With regard to the point that, whenever one conceptualizes a quiddity, one cannot but grasp intellectually its proximate concomitant, [53] it has been said that this is because the quiddity is the cause of its proximate concomitant, and knowledge of the cause is a cause for knowledge of the effect. This argument will receive a full discussion when we come to metaphysics (*al-ḥikma*).

But a more powerful rationale would be to say that, if knowledge of the proximate concomitant did not follow upon knowledge of the quiddity, then one could not come to understand any [previously] unknown proposition on the basis of two known premises. The consequent is false; thus the antecedent is false.

Explanation of this hypothetical syllogism: the predicate of the conclusion must be extrinsic to the quiddity of its subject. Otherwise one would not fail to know that the former is affirmed of the latter. But this can be so, only if [the predicate of the conclusion] is extrinsic to the quiddity of the middle term, or the middle term is extrinsic to the quiddity of the subject. Otherwise the predicate of the conclusion would be a part for a part of its subject, so [because parthood is transitive] it would be a part [of the subject]. Thus we would be back to the same absurdity. [sc. that one must already have known what one is trying to prove]. This being so, if the extrinsic proximate feature can fail to be evidently

affirmed for the thing, then a further proof would be needed for the aforementioned premises—either for both of them, or just one. That [proof] would either be a syllogism—and then the same argument would apply here as above, so a regress would follow—or [the proof] would be sense-perception. But this is impossible, since [sense-perception] does not provide universal premises, as you will learn later. Thus it has been established that, if the proximate concomitant were not evidently affirmed of the quiddity, then one could not learn previously [unknown] propositions.

Let it not be said: the concomitant of a concomitant is a proximate concomitant for this [first-order] concomitant. And if a concomitant is evidently affirmed for the thing, and knowledge of the [second-order] concomitant follows from knowledge of [the first-order concomitant], then all concomitants will be evidently affirmed. [54] *For we say*: our claim is simply that every proximate concomitant belongs evidently to that for which it is a concomitant, but on the condition that one conceptualizes it in the mind. Since this need not occur, it does not follow that all concomitants are evident.

[T22] Al-Rāzī, *Manṭiq al-Mulakhkhaṣ*, 57.2–5

[***real concomitants must be finite***]

Concomitants may be real (*haqīqiyya*), like the accident for the substance, or merely conceptual (*iʿtibāriyya*), like one's being half of two, a third of three, and so on. The former exist extramentally and are finite in number. The latter do not exist extramentally. Otherwise an infinity of attributes would arise, and each of them would in turn have an infinity of attributes.

[T23] Al-Rāzī, *Manṭiq al-Mulakhkhaṣ*, 58.8–59.6

[***against infinite chains of specific differences***]

The genus is the entire shared part [of a quiddity], while the specific difference is the entire distinguishing part. Thereby, one may resolve the doubt posed by someone who tried to undermine the specific difference by saying: if each thing needs a specific difference [59] in order to be distinguished from everything else, then the specific difference would itself need another specific difference to be distinguished from another specific difference, and so on to infinity. *For we say*: each thing needs a specific difference only in order to be distinguished from those other things that share something essential in common with it. And

the specific difference need not share anything essential with anything further. True, it does share [something] in common with the species. But [the specific difference] is distinguished from [the species] by a negative qualification, namely that the genus is not within its quiddity. And distinction by a negative qualification does not yield multiplicity.

[T24] Al-Rāzī, *Manṭiq al-Mulakhkhaṣ*, 63.8–12

[***the genus as such is not a constituent***]

The genus, just insofar as it is a genus, is not a constituent for the quiddity of the species. For its being a genus is a relational accident that belongs to it [only] in relation to its species, so it is inevitably posterior to those species; and the posterior cannot be a part [of that to which it is posterior]. Also, if [the genus] were constituent for the species just insofar as it is a genus, then it would have to be a genus in every species, or even every individual. Rather, what constitutes the species is the quiddity, and it belongs to [the quiddity] only accidentally that it is a genus (*al-jinsiyya*).

[T25] Al-Rāzī, *Manṭiq al-Mulakhkhaṣ*, 80.14–81.3

[***the portions of genus might not depend on specific differences***]

The specific difference cannot perish while the species remains, since a composite cannot remain [81] when its part perishes. As for whether the specific difference can perish while the portion [of genus that belongs to that species] remains, according to the Master [sc. Avicenna], this is absurd, since an effect cannot remain while its cause it absent. But on our view, this principle is false: it is definitely possible.

[T26] Al-Rāzī, *Mulakhkhaṣ*, vol. 1, 313.10–314.1[8]

[***whether the specific difference is a cause for genus***]

The doctrine of the Master [sc. Avicenna] is that the specific difference must be the cause for the existence of that portion of the genus that belongs to the

8 As this passage is missing from the Ms Berlin or. oct. 623, we are quoting from the recent edition by İ. Hanoğlu (Aslein: 2021).

species. But in my view, this is need not be so, since the animal or plant body remains after the loss of the attributes which made that body be the animal or plant. If those items were causes for the existence of that body, this would not be so, since no effect can remain when its cause perishes.

Also, those [attributes] inhere in the body. Hence they cannot be causes, because there can be no [causal] circularity. *Let it not be said*: why can't one say that the essence of that which inheres is the cause for the existence of the subject of inherence, and for its own coming to inhere in this subject, albeit with the condition that its subject of inherence [needs to] exist—so it would have two effects, one a condition for the other? [314] *For we say*: no decisive proof against this possibility is apparent, so one should rather rely on the first argument [i.e. the initial point that the body remains after the loss of the attributes].

[T27] Al-Rāzī, *Sharḥ al-Ishārāt*, vol. 1, 46.8–14

[***proof that there must be simple essences***]

I say: some quiddities are composite, some simple. One cannot but acknowledge that there are simple true realities, because if every true reality were composite, this would yield an infinite regress: every true reality would be composed from an infinite number of parts, each of those parts would in turn have an infinite number of parts. So there would be an infinite multiplicity in one thing, not even one [such multiplicity] but an infinite number of them, which is false. [Paradoxically,] even on this assumption, one must acknowledge the simple [quiddity] because every multiplicity must have units; if there are no units, there is no multiplicity. So it is evident that among true realities, there are some that are simple and distant from composition. Whatever is like this has neither constituents nor essential attributes.

[T28] Al-Rāzī, *Sharḥ al-Ishārāt*, vol. 1, 60.14–61.5

[***knowledge via constituents vs knowledge via concomitants***]

Thereby it is evident and clear that the knowledge of the complete true reality of something can occur only after having known all its essential [attributes] in a detailed way (*ʿalā l-tafṣīl*). Yet it is possible to [61] know something through one of its concomitants even if its [constitutive] essential [attributes] are not known. For instance, when we know about the soul that it is

a substance that moves body, where its moving the body is a concomitant of its quiddity that is extrinsic to it, there follows from this no knowledge of those constituents. Knowledge of a thing's true reality and quiddity cannot arise except upon having known those constituents in a detailed way. This is my view on this issue, but maybe someone else has something better to say.

[T29] Al-Rāzī, *Sharḥ al-Ishārāt*, vol. 1, 63.5–12

[***individuals have something individualizing as part of their essences***]

But the quiddity of this particular [human] does not come to be just from the humanity that is shared [with other humans]. Rather, it only comes to be out of both it *and* something through which [this human] is distinguished from whatever else shares humanity in common with it. This being the case, humanity is not the complete quiddity of that particular [human], but only a part of that quiddity. The upshot is that if humanity were the complete quiddity of [the particular human] it could not be essential, since nothing can have a relation to itself [and essentiality is relational]. But if humanity is not its *complete* quiddity, then "humanity" does not indicate quiddity as such (*dālla ʿalā l-māhiyya*). Therefore, one single thing cannot be essential to another single thing by being related to it, while indicating its quiddity.

[T30] Al-Rāzī, *Sharḥ al-Ishārāt*, vol. 1, 65.7–14

[***concomitance vs. incidental togetherness***]

It may be necessary that one thing is affirmed alongside another incidentally (*ittifāqan*), without being its concomitant. "Human is rational" is never separate from "donkeys bray," but this does not make one a concomitant of the other. This being the case, on must either conclude that examples like this do belong among the concomitants, or that what the Master [sc. Avicenna] says is to be understood in a narrower sense than one would at first understand from it, namely that the concomitant is that which does not separate from something due to an item that goes back to it without being a part of it. We say "an item that goes back to it" since concomitants include those that are concomitant to the quiddity, and those that are concomitant to existence; and in both cases, they may be either through an intermediary or immediate. If we said that the concomitant does not separate from quiddity "in itself", this would leave out the concomitants of existence and those that are mediated.

[T31] Al-Rāzī, *Sharḥ al-Ishārāt*, vol. 1, 66.7–68.2

[***problem of infinite essential properties***]

Because the Master [sc. Avicenna] wanted to show that necessary (*lāzima*) attributes include some that are not essential, he needed to give an example from among the merely conceptual attributes, which are infinite in number. Then he could show that they are not among the class of constituents, on the grounds just mentioned: that if they were, it would follow that something has an infinity of constituents. That is the point of giving this example [sc. that triangle's internal angles are equal to two right angles].

But a doubt may be raised here: these merely conceptual attributes do not exist extramentally. Otherwise one and the same essence would have an infinity of existing attributes, and this is absurd. Rather, these are mental attributes, and they have no existence except in the mind. And if they do not exist extramentally, then they cannot be concomitant to the quiddity extramentally, since one thing's being concomitant to another extramentally presupposes its being extramentally real. Rather, these attributes are concomitant to the quiddity in the mind. But in the mind they are finite, since no mind can present to itself all those infinite relations in explicit detail at once. Clearly then, whatever exists among [67] these relations is finite in number, and if the quiddity were constituted from such attributes, it would not be constituted from an infinite number of items.

To deal with this problem, we say: whatever is constituent for a quiddity must occur to it both in the mind *and* in extramental reality. Given that we know the quiddity can be separated from these attributes extramentally, we know that they are not constituent for it at all, but only concomitant (*lāzima*) to it in the mind. So we have just identified something which is necessary (*lāzim*) for a quiddity without being among the class of constituents. Though we have mentioned this proof, it still works against what the Master said by way of showing that these attributes are not constituents.

If someone says: what demonstration is there that a single quiddity cannot be constituted from an infinite number of things? *We say*: the mind is incapable of presenting itself with an infinity of items in explicit detail. So if the quiddity were composed out of an infinity of items, one could not know it, since knowledge of it could occur only once one has presented oneself with an infinity of items, which is absurd. But this is argument is merely convincing [without being a real proof]. *Another demonstration* is that either (a) some of those

parts are naturally qualified by others, or (b) not. (a) As for the first option, this would mean that one of its parts is more general and another more specific, with the more general qualified by the more specific, as when "rational" qualifies "animal." But if one and the same thing had an infinity of parts, then there would need to be an infinity of causes and effects, which is absurd. (b) As for the second option, which was that none of the parts qualifies the other, but instead the existence and true reality of each is independent from all the others, in that case [68] their aggregate has no true, natural unity but is merely accidental. We are not speaking about that, but about the first kind [sc. where there is a natural unity].

[T32] Al-Rāzī, *Sharḥ al-Ishārāt*, vol. 1, 68.16–69.10

[***does knowledge of an essence involve knowing its casual connections?***]

[*One may argue*:] The quiddity of a cause is not stated in relation to (*bi-l-qiyās ilā*) the effect, but the causality (*ʿilliyya*) of the cause is stated in relation to the effect. Therefore the quiddity of a cause is distinct from its causality. Hence, knowledge of the quiddity of a cause does not imply knowledge of that effect. [...]

[69.2] *We say*: knowledge of a cause's quiddity does not imply knowledge of the effect, except under another qualification, namely that a conceptualization of the effect has occurred. *Explanation*: the quiddity of a cause on its own does not suffice for the occurrence of causality, since being a cause is something relational (*iḍāfī*), and for relational items to occur, just one thing does not suffice. Rather, both relational items must occur. Now, if the essence of the cause by itself does not imply that the attribute of causality arises, for sure knowledge of the essence of a cause does not suffice for knowledge of the causality to occur. This being the case, knowledge of the essence of a cause does not necessitate that knowledge of the effect occur. On the other hand, the essence of the cause and of the effect do, in their own right, imply the relational attributes of causality and being-an-effect, and for sure, once conceptualization of these two has occurred, then there will occur assent to the relatedness of one to the other.

[T33] Al-Rāzī, *Sharḥ al-Ishārāt*, vol. 1, 79.6–13

[***essential accidents***]

You should know: the ancients used to say that an essential accident is that whose definition includes the subject, or what constitutes the subject, like

snub-nosedness for nose. The Master [sc. Avicenna] expressed himself in the same way in the *Shifā'*, and uncritical (*muqallida*) recent scholars have followed him on this. However, in *al-Ḥikma al-mashriqiyya* he explained that this is actually not true, since the subject must be distinct from the quiddity of accidents both in quiddity and existence; so how can it be included in their definition? Besides, in their quiddities accidents are not connected to their subjects. Rather, they are connected to their subjects due to their accidentality, and accidentality is not a constituent but a concomitant. Clearly then, one cannot say that the subject is taken in the definition of the accident. It is because of this subtle point that he abandoned that way of putting it in the present book [*al-Ishārāt*], saying instead [that the essential accident is] "that which attaches to the quiddity due to its substance (*min jawharihi*)."

[T34] Al-Rāzī, *Sharḥ al-Ishārāt*, vol. 1, 99.9–100.10

[***relation between the genus and the specific difference***]

The specific difference provides subsistence (*qiwām*) for the genus, yet it does not *constitute* (*muqawwim*) the quiddity of the genus. Otherwise [the genus] could not be separated from it, and it would not divide [the genus]. Instead, it is constitutive for the *existence* of the genus; not without qualification, but only as far as the portion of the species [made up by the genus]. So "rational" is a cause for "animal," which is a portion of "human," and this far, it is the cause of existence.

But there is a serious problem here. Does the specific difference provide subsistence of that portion [of the species] *after* it has been distinguished from other [portions of "animal" in other species], or *beforehand*? If it does so *after* there is distinction, then there must be a distinguishing cause for this, and that distinguishing cause must be prior to the specific difference, so the specific difference will not be what distinguishes, which is a contradiction. Also, because the same argument will apply to the distinguishing cause, and a regress will ensue. On the other hand, if it is made to subsist *before* the distinction, then "rational," for instance, would be constitutive for "animal" in its unqualified existence, so it would wind up that no animal could [100] ever exist without being rational. This would exclude its even being a genus. [...]

[100.8] *Solution*: the connection of the specific difference to genus is indeed prior to the distinction of the [generic] portions between the various species. However that connection has two aspects (*ḥukmān*): on the one hand that it

distinguishes, on the other hand that it makes [the genus] to subsist. But they come together. So long as making subsistent is connected to distinguishing, the problem is fended off.

[T35] Al-Rāzī, *Sharḥ ʿUyūn al-ḥikma*, vol. 1, 61.9–26; 63.2–14

[*do we know the parts of an essence before knowing the whole essence?*]

[*Objection*]: you have mentioned that knowledge of a quiddity presupposes knowledge of the parts of the quiddity. But this is false, for several reasons. *First*, according to the theologians (*mutakallimūn*), body consists of indivisible parts, whereas according to the philosophers (*falāsifa*) it consists of form and matter. Then the general run (*jumhūr*) of people understand body as a bulk that is extended in different directions, but they don't even think about whether it consists of indivisible parts or form matter and form. Now, if someone objects that body in itself is a single true reality, and that *this* does not consist of form and matter, still there is no doubt that the human body is composed from simple organs. And each of us knows their own body, even without grasping the simple organs of which this body consists. And one grasps a single piece of cotton fabric (*kirbās*) without grasping the fibers from which it is composed, or grasps a certain wall without grasping the bricks from which it is composed. All this refutes your claim that knowledge of the composite has knowledge of each of its parts as a condition. *Second*, the philosophers say that the quiddity of human is as follows: "substance with three dimensions, capable of nutrition, growth, reproduction, sense-perception, voluntary motion, and reason." But every person necessarily knows they are human, without having to know they are composed from these detailed [parts]. This shows that knowledge of the quiddity does not have knowledge of its parts as a condition.

[63.2] [*Response*]: the parts of the body are involved in making the body subsist, insofar as they are [themselves] bodies, not insofar as they are each actually distinct from the other [parts]. Therefore, whoever knows body must know corporeality [at least] to this extent. Whereas the fact that each part is different from another in actuality is a consideration not involved in making the whole body subsist. For sure, then, the knowledge of those parts insofar as they are parts need not belong to the knowledge of the body. Following this pattern, one has an obvious response to the question whether anyone who knows a piece of cotton fabric must know all the fibers, or whether anyone who knows a wall must know all the bricks. As for the point that "human" is "substance with three dimensions, capable of nutrition, growth, reproduction …," we may reply

as follows. If that which we indicate by saying "I" is a rational soul, then those items are *not* parts of the quiddity of this substance, but are rather powers and attributes. Whereas if what one were referring to were the specified body, then it would have been like this [sc. as the objection claimed]. The upshot, then, is that we deny that these attributes are parts of the quiddity of this human.

[T36] Al-Suhrawardī, *Mashāriʿ*, *Manṭiq*, 49.3–50.6

[***critique of a definition of the essential: universals vs. natures***]

It is said that "every universal is either essential or accidental in relation to its particular instances." Which is correct [as far as it goes]. However, this does not cover *all* essential and accidental [predications] in relation to their subjects. For "rational" is essential for "human," but human is not its particular instance, while "capable of laughter" is accidental to human, but human is not its particular instance. Moreover, there is certain confusion in [this statement], albeit a bearable one. For the universal is not a "part" of the particular [that falls under it], since it is more general than it, whereas the essential does enter into the true reality of the thing. Unless one understands ["universal"] in the sense of a nature (*ṭabīʿa*) to which universality is attributed, but not insofar as it is universal. So when we say [it is a] "more general part," we would not mean that [50] the part itself is more general than that of which it is a part, but rather we would mean the part whose nature can be more general [than that of which it is a part].

If it is said [instead] that every universal can be predicated, and every predicate is either essential or accidental, then this would apply to all essential and accidental [predicates]. On the other hand this involves an imprecision, since the essential is a part of the true reality, and we have already shown that a part cannot be predicated. So what one should understand by this [attempted definition] is this: everything whose nature is such that it can be predicated from some perspective, whereby it is related to an item, is either such-and-such or so-and-so.

[T37] Al-Suhrawardī, *Mashāriʿ*, *Manṭiq*, 50.14–15

[***what is constitutive of the* existence *of a thing is not "essential" to it***]

Anyone who says that the essential is the [same as] the constituent is not in the right, since whatever is constitutive of existence is a constituent, like the subject of inherence in relation to the black.

[T38] Al-Suhrawardī, *Mashāriʿ, Manṭiq*, 51.7–9

[***not just anything needed for understanding is "essential"***]

The definition of the essential as "that without which something cannot be grasped intellectually" is plausible, since the thing is not grasped intellectually through the [merely] concomitant. However, one should be careful here about what is requisite for grasping something intellectually. For we can only intellectually grasp something through a perceiving substance, which might be us ourselves or something else. Yet these are not essential for the intelligible!

[T39] Al-Suhrawardī, *Mashāriʿ, Manṭiq*, 53.7–14

[***derivative essential predication***]

Whoever lays it down as necessary that the essential is predicated without derivation (*dūna l-ishtiqāq*), like "substance," whereas the accidental can be only predicated in respect of derivation (*bi-iʿtibār al-ishtiqāq*), so that it is "the black" that is predicated, not "blackness," has made a judgment that need not always hold. For the essential includes what is predicated derivatively, like "rational," while the accidental includes what is predicated without derivation, as "thing" is predicated of "substance," among others, and "accident" is predicated of "blackness" without derivation. Accidentality is not essential for blackness, for [its] relation to a subject is extrinsic to its true reality. "The black" has two parts, and one of them may conceivably be predicated, but not the other. And the parts of a house, like wall and roof, cannot as such be predicates. Cases like this show that the [suggested] rule doesn't always hold.

[T40] Al-Suhrawardī, *Mashāriʿ, Manṭiq*, 54.2–16

[***essentiality and perpetuity***]

The essential includes that which perpetually constitutes the occurring true reality, like corporeality for the celestial sphere. But it also includes that which does *not* perpetually constitute it. For that quiddity may not perpetually exist, like corporeality for horseness, since if something perishes, its being constituted in its quiddity no longer remains either.

Included among accidental concomitants is that which, when one understands the true reality of the subject, and conceptualizes that accident, then one cannot fail to know, and cannot doubt, their relationship, as with triangles

and their [having internal] angles. But concomitants also include that which, when one understands the true reality of its subject and conceptualizes the meaning of that concomitant, one *can* doubt their relationship, like equality to two right angles [for the internal angles of a triangle]. For one can understand the meaning of both, yet be in doubt about their relationship, which one [still needs] to demonstrate, even though it is a concomitant [of triangles] in concrete reality. This concomitant is something that has to belong to concrete individuals, without having to be in all minds as evidently concomitant. In other words, [without having to] occur [in the mind] along with actual assent.

The concomitants include the perpetual concomitant of a quiddity, which always requires it, so that the concomitance is perpetual. For instance the celestial sphere's being a particular, or contingently existent. But the concomitants also include what has to belong, but whose concomitance is not perpetual—not because the quiddity comes to lack [the concomitant feature], but because [the quiddity itself] is eliminated, as with the concomitants of quiddities that are here amongst us [sc. in the sublunary realm]. The concomitants also include that which perpetually accompanies [something] due to an extrinsic cause, like the existence of beings that are separate [from matter] in all respects. And the concomitants also include that which perpetually accompanies [something] due to an extrinsic [factor], but only for so long as the thing [itself exists], and not perpetually, since that thing is not perpetual, like blackness for an Ethiopian.

[T41] Al-Suhrawardī, *Mashāriʿ*, *Manṭiq*, 57.12–59.2

[*essentiality in the case of individuals*]

From what we said it has been established that "animal" is said in answer to the question "what is it?" and is essential. However it is said in answer to "what is it?" in relation to one thing, and essential in relation to another thing. So when we say that it is essential, and is what is said in answer to "what is it?," these must be understood [as applying to "animal"] in relation to two different things. [58] If however they are taken in relation to one and the same being, then this is a mistake, because it conflates things that should be kept separate.

Likewise, when one asks about Zayd, ʿAmr and Khālid, seeking the shared quiddity, it is humanity, and this is what should be said in response. But if one asks

just about Zayd, "what is he?," then one is seeking for the quiddity of Zayd, and this is what should be said in response. If one were to respond by saying "humanity" to the question about the group [of three people] and the one about Zayd on his own, then this [sc. humanity] would be the sought quiddity, not what is essential for the sought quiddity. So the essential would not be given in answer at all; and the essence would never become essential for [Zayd]. So when one says that humanity is essential for Zayd, this does not mean that [it is essential] for the true reality of Zayd, since the true reality of Zayd is just humanity; how can humanity be essential for itself, given that as has been explained, the essential must be a part [of that for which it is essential]? Rather, we would have to mean by this that, if one takes Zayd together with his accidents, like for instance blackness, size, and other features, and along with these takes[9] humanity, then humanity will be essential for this aggregate, that is, it will be a part of the aggregate made up of humanity and the accidents, without being a part of Zayd's true reality. But what is sought [with the question] "what is it?" is the quiddity. Thus, humanity is essential for one thing [sc. the aggregate], but it is said in answer to the question "what is it?" regarding another thing [sc. Zayd's quiddity]. Hence there is no need to invoke a different usage of technical terms here, as the author of the *Baṣā'ir* [sc. al-Sāwī] thought [cf. [T5]].

[T42] Al-Suhrawardī, *Mashāriʿ*, *Manṭiq*, 61.5–63.15

[***distinction between essential and accidental compounds***]

It is not correct to say, regarding the difference between two aforementioned aggregates, that humanity is differentiated by accidents whereas animality is differentiated by essential [features]. [...] [62.4] If this is supposed to mean that the specific [attributes] of animal constitute the aggregate of the animal and that specification, so that they are essential for it, then [*we reply*:] the specifications of human, such as being male, work the same way. For being male is constitutive for the true reality of the aggregate of being male plus humanity. When one asks about human, "what is it?," one may for instance reply "rational mortal animal," and [likewise] when one asks about the male, "what is it?," I mean, with regard to the true reality of maleness, one says: "it is a male human." Indeed, whenever one takes one thing and another to make an aggregate, both are constituents of the true reality [of the aggregate]. One should not say that

9 We accept the reading *akhadha*.

[specific differences make] the true realities and "what-it-is" distinct, whereas in the case of [accidents], true realties and "what-it-is" do not become distinct, since this will be question begging. A [logician can do no better than] to posit those items that are essential, encompassing, and are specified through things that make "what-it-is" different, called genera; [to posit those] specifications as their specific differences, and [to posit] those items that are essential, encompassing, and are specified through things which do not make "what-it-is" different, called species. The only way to decide whether the "what-it-is" is different, and whether true realities are different or the same, is by following the immediate judgment of nature (*qiḍā' al-fiṭra*), one way or another. As for the aforementioned explanations [suggested by the Avicennans], they are false and come to nothing. The decisive criterion is whether there is difference in "what-it-is," or not. […]

[63.9] When it is said in the books [on logic] that being a man (*rajūliyya*) makes no difference to the answer given to the question "what is it?," or that there is nothing that falls below "human" that could be said in answer to this question, this doesn't mean that, if one were for example to ask about the true reality of being a man, as such, the response should be the same as when one asks about the true reality of being a woman, as such, or the true reality of being a human, as such, since this is false. Rather what they mean is this: if one points to a particular man or a woman, and asks what they are, one should answer with "humanity." And if it is asked just about a man alone, not with respect to his being a *man*, but just about this individual, "what is it?," the answer should be "he is a human," and nothing further is needed.

[T43] Bābā Afḍal, *Risāla dar ʿilm wa nuṭq*, 482.3–10

[***essentiality for aggregates***]

When several different meanings become one through composition, and become distinct from others, then that [composed] meaning will have several parts. Some of them are fundamental (*aṣlī*), and its identity (*huwiyyat*) is constituted from those parts. Other parts are not fundamental for it, but are rather ornaments (*ārāyash*) of its existence. For instance body, engaging in nutrition and in growth, rational, and sense-perceptive are parts of the meaning of human, and the identity and humanity of the human are constituted from them. By contrast good, right conduct, and uprightness are ornaments and are additional to the identity of human. For a human is human even while

lacking good or being evil. Each particular is composed from the fundamental and non-fundamental, which are attributes for the composite; the composite is characterized by them.

[T44] Bābā Afḍal, *Risāla dar ʿilm wa nuṭq*, 484.5–7

[*essentiality for particulars*]

When that which is characterized is universal, its attributes may be essential for it or may be accidental. But when what is characterized is particular, all its attributes are essential.

[T45] Al-Āmidī, *Daqāʾiq*, 59.2–9

[*can species be called "essential"? cf.* [*T5*]]

The species [is essential], even though its true reality is the true reality for whatever individuals fall under it, and its substance is identical to their substance. Linguistic usage forbids applying the name "essential" to it, so as to make it a sub-class [of the essential], since in [normal] language, the "essential" is whatever has a relation to an essence, and what is *related* to an essence cannot be the essence itself. That is why [species is "essential"] only according to the technical usage of logic, insofar as it is substantial (*jawharī*) for those individuals that fall under it. And it precedes them in conceptualization, so that if one were able to eliminate the understanding of it, one would eliminate the understanding of [the particulars] too, but not vice-versa. This is the proper characteristic (*khāṣṣa*) of all essential [features]. Thus "essential" is more general notion than "what indicates the quiddity (*dāll ʿalā l-māhiyya*)"; and whatever is specified as indicating the quiddity does not fall outside of being essential.

[T46] Al-Āmidī, *Daqāʾiq*, 70.7–11

[*essential vs. accidental aggregates*]

[The specific difference] may be related to the specified genus, to which it is connected in constituting the species, insofar as it constitutes [the genus] in existence but not in respect of the true reality (*ḥaqīqa*). This is how "rational" relates to the animality of human: it constitutes its specific existence, without [constituting] its true reality. On the basis of this proper characteristic, one may

distinguish between the specific difference and the accidental, whose essentiality is only in relation to composite true realities. This is how "blackness" (as such) relates to the black [i.e. a thing that accidentally has blackness], and so on.

[T47] Al-Āmidī, *Daqā'iq*, 71.21–72.6

[***specific differences are causes of genera: response to al-Rāzī's argument from the specific difference's being an attribute***]

We do not concede that the specific difference is an attribute of the specified genus. The proof works by conversion: just as it is true to say "some animals are rational," so conversely it is true to say, "some of those that are rational are animals." Therefore, neither can be an attribute of the other. When we say "some animals [72] are rational" and "some of those that are rational are animals," we mean that the thing described as "rational" is the thing described as "animal," and vice-versa. When one and the same thing is described by two attributes, it need not follow that one of them describes the other.

[***response to al-Rāzī's argument at [T26]***]

As for the second objection, it would go through only if the body observed in animals and plants were the specified genus. But this is not the case: rather, it is matter. There is a difference between genus and matter, as has been already made clear.

[T48] Al-Āmidī, *Kashf al-tamwīhāt*, 63.5–9

[***against al-Rāzī's proof in [T31] that essential features must be finite***]

As for the second demonstration, it does not follow. For some of the attributes may be finite, and more general than the others, and be qualified by other items whose number is infinite. These would all be of the same rank, and in the aggregate they would [jointly] be enough to substantiate [the essence]. They would play the same sort of role as a single cause which has [multiple] descriptions. Given this, it would not follow that there exists an infinity of causes and effects, nor that their aggregate would fail to be one, in a real and natural way.

[T49] Al-Āmidī, *Kashf al-tamwīhāt*, 65.6–17

[*against al-Rāzī's point in T33; on essential accidents*]

What the Master [sc. Avicenna] says here calls for further investigation. He says, "for the subject is distinct in both quiddity and existence from the quiddity and existence of the accident. So how can it be taken into its definition?" If he means by this that the subject can be understood in its quiddity and existence without the accident, which is said to have the subject included in its definition, then this is true. But that doesn't rule out taking it into the definition of the accident. Otherwise, one could not take "animal" into the definition of human, since the intellect grasps the existence and quiddity of [animal] without [grasping] "human"; but that would be absurd. If, on the other hand, he means that the accident, which is said to have the subject included in its definition, is distinct in its true reality and existence from the subject, then that would be question begging. […]

[65.14] Also, "accident" here means just the accident that is opposed to the "essential," which is included in the definition of the subject; it doesn't mean the accident that is opposed to substance. In light of which, when we say "human is black," the Master would agree here that black is an accident, in the sense that is opposed to the essential, as just mentioned. As the Master agrees, to say "human is black" is, in other words, to say: that thing of which "human" is said is the same as that thing of which "black" is said. Thus the subject of "black" is that thing which is described as being "human." This thing is included in the true reality of "the black (*al-aswad*)," since it cannot be understood without it, even though *blackness* (*al-sawād*) can be understood without it.

[T50] Al-Kashshī, *Ḥadā'iq*, 21^{r}15–21^{v}4

[*essential and accidental compounds*]

The essential may characterize the quiddity by being predicated of it. This is how all generic and differentiating parts are predicated of composite quiddities, as when we say "human is animal" [or] "human is rational" [But the essential] may also be not predicated of [the quiddity]. This is how the parts of aggregated quiddities (*al-māhiyyāt al-ijtimā'iyya*) are when each of their parts can exist by themselves. Their aggregation is not a true (*ḥaqīqiyya*), natural unity that arises because the more specific among them imply the more general ones. Rather, their unity is merely conceptual (*i'tibāriyya*). This is the unity that arises from [just] taking them all together, as when we for instance take con-

crete units as ten, twenty, etc. [21v] For it isn't right to say "ten is five," or "this town is a certain house," even though five is part of ten and a certain house is part of the town. It is different with "number," since one may rightly say, "ten is a number," given that the more specific, in this case being ten, entails the more general [sc. being number].

[T51] Al-Kashshī, *Ḥadā'iq*, 29r6–20

[***the specific difference is a cause for the genus***]

Every specific difference is a cause for the existence of the portion of genus that belongs to the species. Otherwise, it would follow that the genus and the specific difference are independent of one another, so that one could take the specific difference without the genus, or take the portion of genus that belongs to the species without the specific difference. But all this is absurd, since the portion cannot exist without that which apportions it, nor vice-versa. If that were to happen, then there would exist a naturally ordered infinity of effects and causes at the same time, but this is absurd as shown by the proof of juxtaposition (*dalīl al-taṭbīq*), as will be shown in natural philosophy, God willing.

Let it not be said, against the proof we have mentioned to show that the specific difference is the cause of the existence of the portion of genus that belongs to the species, *that*: the specific differences of animals and plants are accidental powers which subsist through those bodies, and whatever subsists in something depends on it, and so cannot be a cause for it (cf. [T26]). *Let this not be said, for we say*: we do not concede that those specific differences are "accidental powers." Rather, they are substantial forms that subsist through themselves, not through any subject at all. For each of them is a part of a concrete substance, and the part of substance cannot but be a substance. So if the differentiating part of each [kind of] plant and animal, as well as other corporeal species like them, is a substance, then it can be essentially prior to the generic part of them, and be a cause for it.

[T52] Al-Khūnajī, *Kashf al-asrār*, 29.3–8

[***whether the genus is the essential for multiple species taken together***]

Furthermore, another aspect of our usage [of technical terms] is that we mean here by "essential" a part of the quiddity, and by "accidental" that which is extrinsic to it. This is not incompatible with sometimes making a genus indic-

ative for a whole quiddity, by way of correspondence, while [also being merely] a part of another quiddity. For to the question "what is it?" one does reply with the [genus] if one has been asked about more than one quiddity: it indicates the entirety of their true realties insofar as the question was about all of them. What is sought [by such a question] is the core (*kunh*) of the true reality that belongs to them by being shared. From this perspective, it is not a part [of those quiddities]. Thus the meaning of something's "being a genus" is different from that of its "being a part," even if that to which [these meanings] apply is one and the same.

[T53] Al-Khūnajī, *Kashf al-asrār*, 47.3–9

[***on the relation between genus and specific differences: al-Rāzī confused essential compounds with conceptual compounds***]

The Imām [sc. al-Rāzī] taught that this doctrine [sc. that the specific difference is a cause for the genus] is false. For if we consider the aggregate which is composed from an essence and an attribute that is more specific than it, then just insofar as it is that aggregate, the essence will be a genus for it, while the attribute will be a specific difference, without it being able to exercise causality.

We say: so long as we consider this [claim] with regard to the genera of meanings we grasp intellectually, and their specific differences, and what is named by expressions in the way we have assigned them, then it will be as the Imām said. If however we consider genera and specific differences in respect of the quiddities of particular things, in accordance with the facts (*bi-ḥasab al-amr nafsihi*), then as far as I'm concerned, there is nothing to show that this [sc. specific difference causing the genus] is ruled out, or for that matter that it must be the case. But clearly what the Imām suggested does not lead to its being ruled out.

[T54] Al-Abharī, *Khulāṣa*, 129.12–15

[***on the finiteness of constituents and concomitants***]

There is no demonstration that essential [features] and concomitants must be finite in concrete individuals. As for the quiddity grasped in the intellect, essential [features] must be finite: otherwise one could not grasp them intellectually. Their concomitants in the mind, though, may be infinite, as with two's being half of four, a third of six, a fourth of eight, etc.

[T55] Al-Abharī, *Khulāṣa*, 137.9–16

[***priority of genus over essence: in existence and predication***]

The proximate genus's being predicated of the species is the cause for the remote genus' being predicated of it. For "body" which is not "animal" cannot be predicated of "human." Predicating "body" [of "human"] depends on predicating "animal" of it. This is what we mean when we say [the genus] is a cause. What has just been mentioned shows that [the proximate genus] is the cause for the predication of all other essential features.

If someone says: corporeality is a part of animality, so it is prior to its existence; thus animality cannot be the cause for its predication of it, but to the contrary is posterior in predication. *Then we say*: why can't it be prior in existence but posterior in being predicated of the species? Some [further] demonstration would be needed for this.

[T56] Al-Abharī, *Daqā'iq al-afkār*, 528.19–22

[***against al-Rāzī's objection to non-explicit knowledge of the essential***]

Let it not be said: if [essential predicates] were known, then they would be known in explicit detail (*ʿalā l-tafṣīl*), since nothing can be known without knowing it as distinct from everything else. *For we say*: we do not concede that nothing can be known without knowing it as distinct from everything else. For if this followed, then knowledge of that distinction would imply [second-order] knowledge about the distinction, and so on to infinity. Thus conceptualization of an infinite number of things would by implied by the conceptualization of just one, which is absurd.[10]

[T57] Al-Abharī, *Muntahā*, 219.8–15

[***the specific difference is the cause of the genus***]

[The specific difference] is, in relation to the unqualified genus, that which divides it. In relation to the species, it is constitutive. And in relation to that portion of the genus that belongs to the species, it is a complete cause or a part thereof. For if it were not, then the specific difference would either depend on

10 This solution is also ascribed to al-Khūnajī by al-Kātibī at *Munaṣṣaṣ*, 20^{r}.

[that portion of the genus] or it would not. The first option is absurd, since otherwise the existence of the portion would occur before the existence of [the specific difference], which is absurd; and if one eliminated the [specific difference] in the imagination, [the portion of genus] would not be eliminated, which is a contradiction. The second option is absurd too, since if it were not, then no single true reality could be composed from them, which is absurd.

Let it not be said: the true reality of the portion [of genus] either depends on a concrete specific difference, or it can do without it. The first option is absurd, otherwise there would exist no [instance of the genus] other than it. That leaves the second option, but whatever can do without something cannot come to depend on it. *For we say*: the set of options is rejected. [The portion of genus as such] does not require either of these. It requires only that it depend on *some* specific difference. When a concrete specific difference requires the existence [of that portion of genus], the dependence on [that specific difference] occurs accidentally to [that portion].

[T58] Al-Abharī, *Kashf al-ḥaqā'iq*, 39.10–40.4

[***whether the specific difference is the cause of genus***]

Imām [al-Rāzī] argued against the claim that [the specific difference] is a cause [for the genus] in several ways. *First*, if one considers the aggregate composed from the quiddity of something and an attribute that belongs to [the quiddity] and is more specific than it, then the essence is a genus for [the aggregate], and the attribute a specific difference for it—yet [in such a case] the specific difference would not be a cause for the genus. *Second*, the portion of the genus ["body"] that belongs to plants remains even after its specific difference is eliminated. But no effect remains after its cause perishes. Therefore, that "body" [sc. the genus insofar as it belongs to plants] is not an effect of the specific difference. *Third*, the specific difference inheres (*ḥāll*) in the portion [of genus that is in the species], and what inheres in something depends on it; but if one thing depends on another, the former cannot be the latter's cause.

Response. *To the first, we say*: we do not concede that, if one considers the attribute together with the essence, the attribute is a specific difference for the species. Rather, it is a specific difference for a conceptually construed quiddity (*māhiyya i'tibāriyya*). But what we are talking about is the specific difference [40] that constitutes a real species. *To the second*: we do not concede that the "body" which is the portion [of genus] in plants does remain after the spe-

cific difference perishes. *To the third*: we do not concede that what inheres is dependent. For it could be that there is some separate cause for the inhering of the specific difference in the genus and the generic nature, on the condition that the portion [of that genus] is sufficiently disposed for the specific difference.

[T59] Al-Ṭūsī, *Sharḥ al-Ishārāt*, vol. 1, 159.24–160.13

[***can essential concomitants be infinite?***]

The eminent commentator [sc. al-Rāzī, see [T31]] calls attention to the fact that he [sc. Avicenna] posited as extramentally existent those predicates that do not hold by a relation (*qiyās*) to items outside the subject; those that hold by a relation to [what is outside] are existent in the mind, not extramentally. [160] Then [al-Rāzī] denied that the second group can be infinite, since the mind must stop at some point (*ḥadd*).

The truth is this: one thing's being predicated of another is an item in the intellect (*amr ʿaqlī*), regardless whether it is by a relation to an item outside [the subject], or not by a relation to anything. For it is only whiteness, for instance, that exists in the subject: outside the intellect, the subject's *being white* is nothing over and above whiteness and its subject. That is why predication and imposition (*waḍʿ*) are secondary intelligibles.

As for certain attributes being infinite, this is so only in respect of potentiality and possibility (*imkān*). Only a finite number of them can ever pass into actuality, as is the case with all other things that are described as being infinite, like numbers, etc. The reason why [concomitant] attributes like these cannot be constituents is that, something actually existing cannot be constituted from parts that exist only potentially. This is because the parts of something must be present together with it (not because of the commentator's preferred argument, that whatever exists outside the mind cannot be constituted from mental parts).

[T60] Al-Ṭūsī, *Sharḥ al-Ishārāt*, vol. 1, 161.11–19

[***immediate, self-evident concomitants***]

You should know: the judgment that an immediate concomitant holds self-evidently of its subject requires neither the lengthy demonstration provided by

the commentator [sc. al-Rāzī], nor the solution of the doubts he raised about it, some of which he took up in other books of his. For so long as one interprets "concomitance" as lack of separability (*ʿadam al-infikāk*), then whenever one thing is "concomitant" to another without the meditation of something else, it cannot be separated from that thing, regardless whether it is concomitant to it in the intellect or extramentally. "Concomitance in the intellect (*al-luzūm al-ʿaqlī*)" just means that the intellection of what has the concomitant is inseparable from the intellection of its concomitant, which means that [the concomitance] is self-evident for [the intellect]. By contrast, a concomitant that does have an intermediary is inseparable so long as the intermediary is present [to the mind], but it is separable when [the intermediary] stays hidden. Then, being separable, it is not self-evident.

[T61] Al-Ṭūsī, *Sharḥ al-Ishārāt*, vol. 1, 161.23–162.9

[***does knowledge of concomitants yield an infinite regress?***]

Concomitants in sequence, which are all concomitant in relation to their quiddity, and not to anything else, can keep coming as long as nothing occurs to the mind that would interrupt it and turn its attention away from those concomitants and toward something else. However they only ever amount to a few in existence, far from getting to the point where they become unlimited. [162] As for those unlimited concomitants, which are the sort that most of the sciences concern themselves with, they are [concomitant] due to a relation between the subject and something else. These arise only once one has conceptualized the items to which the subject is related. But the conceptualization of those items, which is a condition for the occurrence [of those concomitants], need not happen in a sequence, such that it would lead to the existence of those [infinite] ordered concomitants. Thus the doubt is fended off.

[T62] Al-Ṭūsī, *Sharḥ al-Ishārāt*, vol. 1, 171.8–172.8

[***are essential accidents defined in terms of their subjects?***]

I say: what the Master [sc. Avicenna] mentioned about this topic in *al-Ḥikma al-mashriqiyya* comes down to [saying] that the accidents which are presented as needing their subjects, if they are to be specified, have nominal accounts (*taʿrīfāt*) that necessarily include reference to their subjects. But in themselves their true realities do not, in respect of their quiddities, include their subjects, even if they do need them in respect of existence. The complete definition

(*ḥadd*) is made up of the quiddity's constituents, not the constituents of existence. When the quiddities of [essential accidents] are simple, lacking genera and specific differences, then they have no definitions. But when they do have genera and specific differences, their complete definitions include only these, not their subjects. Accounts (*taʿrīfāt*) that include their subjects are [merely] their descriptions (*rusūm*), not their definitions.

Now, all this applies only to those things whose essences can be conceptualized without having to pay attention to their subjects. In the cases where this is required, their meanings (*mafhūmāt*) are composed from their own true realities *and* a consideration of their subjects. So they must be defined by taking their subjects into consideration. This is because a connection to something in existence is distinct from a connection to the meaning; but what is sought in the definition is nothing but the meaning.

This then is the upshot of what [Avicenna] said in connection to this point of inquiry. If not for the sake of avoiding undue length, we would quote it literally. Obviously the accidents given by the Master as examples in this section of the *Ishārāt* include some that cannot be understood without attending to their subjects. For "equality" is correspondence in quantity in itself; "relativity" is correspondence in quantity as related to something else; "evenness" is the divisibility of a number into two, as the Master's own account elsewhere explained. [172] If then one were to take their subjects out of these explanations, "relativity" and "equality" would be left as a sheer correspondence, which is a type of relation, while even-ness would be left as mere divisibility into two, which is a type of division. None of them would be an essential accident for quantity, number, or anything else. The same goes for the other [examples].

[T63] Al-Ṭūsī, *Ajwibat al-masāʾil al-Sayyid Rukn al-Dīn al-Astarābādī*, 58.7–12

[***how the specific difference is a cause for the genus***]

The genus and specific difference exist only in the intellect. The genus is a vague (*mubham*) item of intellection, and the specific difference determines this vague item in such a way that, if there were no [specific differences], the genus would not apply to different things. But what applies to different things is not determinative (*muḥaṣṣil*) of existence. So when one speaks of the causality [of the specific difference for the genus], this means determination (*taḥṣīl*), not causality in the usual sense. For the genus is predicated of the specific differ-

ence, and both of them are predicated of the species, whereas an effect cannot be predicated of its cause, nor can the effect and the cause [be predicated] of what is jointly composed from both.

[T64] Al-Kātibī, *Munaṣṣaṣ fī sharḥ al-Mulakhkhaṣ*, 19^{v}15–19

[*in defense of essential features' being attributes, cf.* [*T14*]]

Let it not be said: a proof is offered to show that the part of a quiddity cannot be attributed (*ittiṣāf*) to it, namely that the purpose of attributing the part to the quiddity would be to distinguish it from other [quiddities], in virtue of that attribute. But one may distinguish a composite quiddity without attributing a part to it, since it [already] includes the part, which would distinguish it. This being so, the attribution of a part to a quiddity is redundant nonsense that does no good.

For we say: we do not concede that every composite quiddity can be distinguished without attributing a part to it. This would follow only if every composite quiddity were [immediately] known with all its parts. But this needn't be the case: there may be some composite quiddities that are not known [together] with all their parts. In light of which, the attribution of a part to them will distinguish them from others.

[T65] Al-Kātibī, *Munaṣṣaṣ fī sharḥ al-Mulakhkhaṣ*, 20^{r}10–14

[*how essential features are known, cf.* [*T15*]]

What do you mean by "knowledge" when you say that, whenever one knows the quiddity inclusively (*ijmālan*), each of its parts is either "known" or not "known"? If you mean [the part would be also known] inclusively, then we would select the option that it is known. We do not concede that this would imply that each of them would be distinguished from the others in the mind. For knowledge of something inclusively does not imply knowledge of its distinction from other things. If however you mean [the part would be known] in explicit detail (*ʿilm tafṣīlī*), then we would select the option that [the part] is *not* known. We do not concede that this would imply the falsehood of the claim that the conceptualization of the quiddity depends on the conceptualization of its parts. This would follow only if the quiddity were known in explicit detail; but that is not the case, as it is known inclusively.

[T66] Al-Kātibī, *Shamsiyya*, 206.25–207.27

[*the types of universal simply as answers to the question "what is it?"*]

The universal is either (a) the complete quiddity of those particulars that fall under it, or (b) something intrinsic to [the quiddity], or (c) something extrinsic to [the quiddity].

(a) *In the first case*, [the universal] is the true species (*nawʿ ḥaqīqī*), regardless whether the particulars are numerous, [in which case] it [207] is said of them in answer to [the question] "what is it?," with regard to both what is shared and what is specific, for example "human"; or whether the particulars are not numerous [i.e. there is only one particular that falls under the species], in which case it is said of them in answer to [the question] "what is it?" with regard only to what is specific, for example "Sun." Thus [the true species] is a universal that may be said of only one [particular], or of many things to which the same true reality belongs, in answer to [the question] "what is it?"

(b) *In the second case*, if [the intrinsic universal] is a complete part that is shared by [those particulars] and by another species, then it is said in answer to [the question] "what is it?" with reference only to what is shared, for instance "animal" in relation to "human" and "horse." This is called a genus. [...] [207.15] But if [the intrinsic universal] is not a complete part that is shared by [those individuals] and another species, then inevitably it is either not shared by the quiddity and any other species at all, like "rational" in relation to human, or there is some complete part shared [in another species] that is equivalent to it, like "sense-perceptive." [...] [207.21] This is a specific difference. [...]

[207.26] (c) *In the third case*, if [the extrinsic universal] is inseparable from the quiddity, it is a concomitant (*lāzim*). Otherwise it is a separable accident.

[T67] Ibn Kammūna, *al-Jadīd fī l-ḥikma*, 12.5–9

[*the quiddity is "essential" for the individual*]

If a predicate is intrinsic to the quiddity of its subject, like "animal" for "human," or if it just is the quiddity, like "human" for Zayd—since Zayd is nothing but a human specified by accidents (he isn't an aggregate of "human" plus those accidents)—then [this predicate] is essential. Whereas if it is extrinsic to [the quiddity], then it is accidental.

[T68] Ibn Kammūna, *Sharḥ al-Talwīḥāt*, vol. 1, 48.12–19

[***how we know the difference between species and accidental compounds***]

You should know: among composite things some have a specific part that does not constitute the existence of the general part, because the two acts of making are not one and the same, for instance "body possessing a vegetative soul" and "body possessing an animal soul." These include cases where the specific part makes the general [part] to be a species, as clearly happens in these two examples [sc. because a certain kind of soul makes the body to be a plant or animal]. But in other cases the [specific part] does not do this, as has been seen above with the specifying features of particular humans, like Zayd and ʿAmr [sc. because individual humans are not species].

Then some composites have specific parts that do constitute the existence of the general [part]. These include cases where [the specific part] does not make [the general part] to be a species, like blackness, which is taken along with its specification through that subject of inherence [sc. the thing that is black], since this exists only in virtue of that subject of inherence. In other cases [the specific part] does make [the general part] into a species, for instance "rational" and "neighing," which make "animal" into a species.

The guide for whether a species is brought about, and whether there is a change in the answer to "what is it?," is whatever one would directly observe (*shahādat al-fiṭra*), not whether the act of making is or is not one and the same.

[T69] Ibn Kammūna, *Sharḥ al-Talwīḥāt*, vol. 1, 51.16–19

[***only the lowest species is a real species***]

If it is said: "animal" is a true species (*nawʿ ḥaqīqī*) also in relation to the portions [of a higher genus to which "animal" belongs]. *Then we say*: the portions [of that higher genus] are not fundamental in existence (*muta'aṣṣila fī l-wujūd*) in the absence of specific differences. So if one calls them "true species" from this point of view, then there would be an overlap between the two notions [sc. true species and relative species; see T7]. But the author of this book [sc. al-Suhrawardī], means here by "true species" only that which is said of fundamental true realities.

[T70] Ibn al-Nafīs, *Sharḥ al-wurayqāt*, 16.11–17.2

[***how essential features are "prior"***]

The essential is defined by two qualifications. (a) *First*, whenever one intellectually grasps both it and that to which it is attributed, one must believe that the former is affirmed of the latter. (b) *Second* is what we mean by saying that it is "first." This may in turn be understood in two senses. (b1) *One* is that its intellectual grasping is "first," that is, is prior. (b2) *The other* is that one intellectually grasps *that* it is first. And by "priority," we mean here that the posterior requires the prior for its realization. Both senses [i.e. (b1) and (b2)] are affirmed of the essential. For if one understands the meaning of "animal," one cannot understand the meaning of "human" without "animal" being prior to it in conceptualization; and it is [furthermore] conceptualized as being prior to it. That is, being a human presupposes being an animal. Likewise, conceptualized as human presupposes being conceptualized as animal. The same goes [17] for "human" with regard to Zayd and ʿAmr, because the essential includes both that which is intrinsic to a quiddity and the complete quiddity itself. This is how the terminology is used by certain logicians; it makes no difference for us if common usage is otherwise.

[T71] Al-Samarqandī, *Qisṭās*, 111.3–21

[***real vs. mental composition***]

The "quiddity (*māhiyya*)" of something is that in virtue of which it is what it is (*hiya mā bihi al-shayʾ huwa huwa*). It may alternately be called "essence (*dhāt*)," "true reality (*ḥaqīqa*)," and "substance (*jawhar*)." Sometimes "essence" is used specifically for existents, while "quiddity" is used for composites.

Every true reality either is simple, in which case it doesn't come down to [further], various true realities; or it is composite, in which case it does. The parts of the composite are either predicated of it, like "animal" and "rational" for "human," or not, like roof and wall for a house. But this is not [sufficiently] shown in people's books. *The verification of this is as follows*: if a quiddity comes down to something aggregated from a number of things, and is a true composition (*tarkīb ḥaqīqī*) which people generally acknowledge, then those parts cannot be predicated of it synonymously, since one cannot say that a given thing, which is aggregated from certain[11] different things, is identical to a given

11 Swapping *hādhā* and *hādhihi* in this sentence.

part [of it]. This [predication] can occur only by way of derivation (*ishtiqāq*) or composition. Whereas if it is not like this, but rather it comes down to the thing to which these things are attributed, then one can truly [predicate] the parts of that thing.[12] But this sort of composition occurs only in the intellect. For in extramental reality, there is just one and the same thing, which may be truly said to be this or that. Instead, the intellect composes this quiddity from that aggregate.

As for how the thing must be described by these meanings: if the meanings and items belong to it, then there arise from them understandings (*mafhūmāt*) that may be truly ascribed to it, in the sense that they are the same as it (*bi-huwa huwa*). It is with respect to the arising of [these understandings] that [the thing] becomes a quiddity and a true reality. These understandings are then followed by other ones, which are among the attributes [of that thing]. This is how it is with "human," for example: it has matter (*mādda*), for which a number of meanings arise, such as independence from a subject, dimensions, growth, sensation, voluntary motion, and rationality. Through them ["human"] becomes a substance that is corporeal, growing, sense-perceptive, dimensionally extended, voluntarily moving, and rational. These are then followed by further meanings, like the capacity for wonder, disposition for the arts, and so on. The first [group of meanings that] followed are "essential," while those that followed [next] are "accidental."

[T72] Al-Samarqandī, *Qisṭās*, 115.8–14

[*against al-Rāzī's critique of inclusive knowledge and the usual response to it*]

The Imām [al-Rāzī] rejected inclusive (*ijmālī*) [knowledge of essential features] by saying that, if every part [of a quiddity] were known, then it would already been distinguished from [every] other [part] in the mind. Otherwise, it would be false that the part is conceptualized before the quiddity, yet this is necessarily so.

But this is unconvincing. Not because of what has been said [in response], that it would lead to knowledge of the distinction, and then to [knowledge of] the distinction of the distinction [and so on infinitely]. For the distinction of one

12 Amending to *ʿalayhi ajzāʾuhu*.

thing from others in the mind does not require knowledge of its distinction [from the others], since knowledge is the occurrence of *the form* of something in the mind, not the occurrence of that thing in itself. Rather, [it is unconvincing] because the necessity [of the priority of parts over the whole] applies to knowledge that is explicitly detailed (*tafṣīlī*), not inclusive knowledge, which we are discussing here.

[T73] Al-Samarqandī, *Qisṭās*, 115.15–117.8

[***other meanings of*** **dhātī*, cf.* [*T18*]]

In texts other than the *Isagoge*, "*dhātī*" may also be applied to what is predicated, to predication, to the affirmation of a cause, and being existent:

What is predicated: whatever cannot be separated from something, like concreteness for the existent; or [it is inseparable] from a quiddity, like having angles equal to two right angles for a triangle; or cannot be removed from the quiddity, but in the sense that if one conceptualizes it together with a quiddity, one cannot deny it with respect to [that quiddity], like "being even" for four; or it must be affirmed of [the quiddity], in the sense that the quiddity can only be conceptualized together with it, like animality for human. Each of these cases is more specific than the previous one.

Essential (*dhātī*) *predication*: if the subject deserves to be the subject of something; or if what is predicated is more general than it; or it belongs to it in itself (*bi-l-dhāt*), or by demand of its nature; or perpetually; or without mediation; or it is constituent for it; or it is attached to it neither in virtue of anything more general nor anything more specific. This last one is called "essential accident (*ʿaraḍ dhātī*)" in the *Book of Demonstration*.

Affirmation [*of a cause*]: if the sequence of cause and effect holds always or for the most part; but "accidental" for what is contrary to these things.

Being existent: what subsists in itself and exists in itself, whereas whatever subsists through another is accidentally existent.

[T74] Al-Samarqandī, *Qisṭās*, 125.3–6

[***is concomitance in itself extramentally real?***]

It might be said: concomitance (*al-luzūm*) must either be (a) in extramental reality or (b) not. (a) If it is, then an infinite regress in real things follows in the direction of the principle, since every concomitance will require another one before it. (b) But if it is not in extramental reality, this is what was to be shown. *Response*: the concomitance [of concomitance] is [the first-order concomitance] itself, just like the existence of existence is identical to [first-order existence] itself.[13]

[T75] Al-Samarqandī, *Qisṭās*, 143.7–12

[***objection to the idea that the specific difference is a cause for the genus***]

There is something else that undermines this claim [that the specific difference is a cause for the genus], namely the doctrine of Aristotle, the Master [sc. Avicenna], and their followers, that something corporeal (*al-badan*) is a condition for the origination of the soul from the Active Intellect. By this [condition] they meant either a body (*jism*), a nutritive body, or an animal. Whatever the case, if the genus depended on the specific difference, a vicious circle would follow, since body would then depend on the nutritive, and the nutritive on the sense-perceptive and voluntarily moving. So it would follow that the rational depends on animal; but if this were so, a vicious circle would follow.

[T76] Al-Ḥillī, *al-Jawhar al-naḍīd*, vol. 1, 15.14–20

[***being "essential" for the essence***]

Most of the ancients prohibited the application of "essential" to [the essence itself], since the essential is related to the essence, and nothing can be related to itself. But this is unconvincing, since [the essence] is essential for its instances and not for the quiddity itself.

[***constituents of essence vs. existence***]

We say: [the essential] cannot be extrinsic to it, since "constituent" may be applied to that which constitutes a quiddity, which is what we are talking about,

13 For the latter type of argument see further "Essence and Existence Distinction" in *Metaphysics and Theology*.

but also to that which constitutes existence, as causes do, yet is extrinsic to the quiddity. With the aforementioned qualification, we exclude that which constitutes existence. This "essential" that constitutes the quiddity is different from the one that constitutes existence. By "what constitutes the quiddity," we mean genus and specific difference, or matter and form—and in general the parts of things, either in the mind or extramentally. Whereas, when we speak of "what constitutes existence," we mean the efficient and a final [cause], and the subject.

[T77] Al-Ḥillī, *Asrār*, 26.17–20

[***defense of inclusive knowledge of essential features***]

Essential features are known whenever the quiddity is known, either inclusively or in explicit detail (*ijmālan aw tafṣīlan*). *Some have said*: if they were known, then one would know their distinction from everything else, and hence they will be known in explicit detail [after all]. But this is not accepted. For knowledge of the distinction is knowledge about something that occurs to the quiddities accidentally and in relation to other things.

[T78] Al-Ḥillī, *Asrār*, 26.2223

[***constituents of essence vs. existence***]

Regarding the difference between "essential" and "accidental," it has been said that the essential is constitutive and the accidental is not. But this is not quite right, since the constituent may sometimes be constitutive of *existence*, for instance the subject of inherence.

[T79] Al-Ḥillī, *Asrār*, 29.8–9

[***self-evidence of concomitants***]

You should know: insofar as concomitance is explained in terms of inseparability (*bi-ʿadam al-infikāk*), every concomitant—regardless whether it is extramental or in the mind—will be inseparable from the quiddity. This is what is meant by saying that it is "evident."

CHAPTER 7

Predication

Though Avicenna and his successors dealt with propositions that were not predications, like hypotheticals ("if A then B"), much of their logic is still within the Aristotelian paradigm where a predicate is stated to hold of some subject, as in "Human is animal" or "Zayd is human." This naturally meant that they needed to explain what it means to predicate one term of another. The most straightforward idea would be that when B is predicated of A, we are saying that A and B are the same. This is why you will never find an A that is not a B, e.g. you will never find a human who is not an animal. But there is an obvious objection here, the one made at [T7, T13]: if A and B are just the same, so that "A" and "B" are synonyms, how would it be informative to say that B belongs to A? This would be like saying "Human is person" [T16].

A remark by Avicenna [T1], elaborated by Bahmanyār and al-Sāwī [T3, T4], suggests a solution. Our terms A and B are extensionally identical, but intensionally distinct. That is, every A is in fact a B, but it is still informative to be told that B belongs to A because the two terms are *not* synonyms. They have different meanings (though, problematized in [T5]), and one could understand the meanings of "A" and "B" without knowing whether or not every A is a B. (For example you might know what "giraffe" means, and what "ungulate" means, but it would be an open question whether giraffes are ungulates.) As al-Ṭūsī explains, following Avicenna, we actually have three elements here, not two [T14]. There are, of course, the two terms A and B. Then there is also that item to which A and B are applied, the "thing" that is a case of A, and has B predicated of it. Ibn Kammūna makes a similar point using the standard vocabulary of "conceptualization" [T16]. When we say "Human is animal" we are saying that our *concept* of animal applies to everything to which our *concept* of human applies. In an alternative formulation, also suggested by Ibn Kammūna, the predicate term "signifies" the thing in question [T17]; the key term here, *ʿunwān*, means a token, sign, or title of something. Ibn Kammūna also cautions us not to think that things only become "things" or "essences" when we predicate the terms "thing" or "essence" of them. Rather the underlying item already is what it is and is thus already a thing with an essence [T18].

Now, it may already have occurred to the reader that the subject and predicate in our standard example is not really one where we have extensional *identity*: all humans are animals, but not all animals are humans. So when we speak of extensional identity we mean only that every instance of the sub-

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ject term is an instance of the predicate term, not vice-versa. In fact al-Ḥillī says that this is always the case: the predicate should always be "more general" than the subject [T21]. If that is so, then it will never be possible to predicate a particular term of anything, because a particular is not more general than anything else. Indeed our authors do rule out predication of particulars, like "Human is Zayd" [T8, T15, T19]. If one said this, one would be illegitimately restricting the subject term, such that only Zayd is a human. This is comparable to the fact that a part cannot be predicated of a whole (note that in Arabic as in English the word for "particular" is derived from the word for "part": *al-juz'ī* from *al-juz'*). But al-Abharī is not so sure about all this. He argues that you can predicate a particular *accidentally*, because "human can accidentally wind up being Zayd" [T10]; perhaps he has in mind here a case where Zayd is the last living human. Also if we introduce a quantifier and say "*Some* human is Zayd," this is unproblematic. He further observes that a genus is taken to be in some sense a "part" of a species, and genera can be predicated of species as in "Black is a color." So parts can be predicated of wholes after all [T11].

Thus far we have discussed what Avicenna calls "synonymous" predication, where we link two intensionally distinct but extensionally identical (in the above sense) classes. But he recognizes another kind of predication, which involves the possession of an attribute [T2], echoed at [T7, T20]. To illustrate, our texts often use the ancient example of "risible," meaning here "capable of laughing" and not ridiculous or "laughable." "Risible" is a case of what is in the Arabic logical tradition called "derivation (*ishtiqāq*)": it is an adjective derived from the noun "risibility."[1] The same applies to terms like "writer (*kātib*)," derived from the verb "write (*kataba*)," and "white (*abyaḍ*)," derived from "whiteness (*bayāḍ*)." Here Abū l-Barakāt al-Baghdādī makes a controversial suggestion. After repeating Avicenna's distinction between synonymous and derived predication at [T5], he says that in the latter case, the real predicate is not the derived term but the attribute [T6]. Thus what is really predicated of snow in "Snow is white" is not "white," but "whiteness"; its different form is a mere linguistic phenomenon. Against this al-Khūnajī, followed by al-Abharī, argues that Abū l-Barakāt is confusing the copulative relation, whereby something is genuinely *predicated* of a subject, with the possession relation,

1 This terminology may be historically related to the relevant terminology in kalām and Arabic grammar; see further C. Schöck, "Name (*ism*), Derived Name (*ism mushtaqq*) and Description (*waṣf*) in Arabic Grammar, Muslim Dialectical Theology and Arabic Logic," in: S. Rahman, T. Street, H. Tahiri, The Unity of Science in the Arabic Tradition (Berlin: Springer 2008), 329–360.

whereby something is said to *belong* to a subject [T9]. For further insight on this, we need to investigate the nature of the copula, which will be a central issue in our next chapter on the Proposition.

Texts from: Avicenna, Bahmanyār, al-Sāwī, Abū l-Barakāt al-Baghdādī, Fakhr al-Dīn al-Rāzī, al-Suhrawardī, al-Khūnajī, al-Abharī, Naṣīr al-Dīn al-Ṭūsī, al-Kātibī, Ibn Kammūna, al-Ḥillī

[T1] Avicenna, *Ishārāt*, 43.6–9

[***predication as extensional identity***]

When we say that "shape" is predicated of triangle, this does not mean that the true reality (*ḥaqīqa*) of triangle is the true reality of shape. Rather it means that the thing of which "triangle" is said, is identical with the thing of which "shape" is said—regardless whether [that thing] is in itself some third thing, or one of these two.

[T2] Avicenna, *Shifāʾ*, *Manṭiq*, *Madkhal*, 28.5–8

[***direct and derivative predication***]

Predication is of two kinds. (a) Synonymous predication (*ḥaml muwāṭaʾa*), like "Zayd is human," as "human" is predicated of Zayd in true reality and synonymously. (b) Derivative predication (*ḥaml ishtiqāq*), such as how whiteness relates to human. For one says that human is white or possesses whiteness (*dhū bayāḍ*), yet one does not say that [human] *is* whiteness. If it happens that one says "Body is white" or "Color is white," [neither] is ascribed to the subject as a predicate.

[T3] Bahmanyār, *Taḥṣīl*, 15.4–8

[***extensional identity***]

When we say "Human is animal," this does not mean that the true reality of human is identical with the true reality of animal. Rather, we mean that something which is said to be a human is identical with something which is said to be an animal. That "something" is not "thing" without qualification; rather it is some given thing (*shayʾ mā*). It is not that which is specified as human [alone]. Rather it is something which is specified as human [in one respect]

and as animal [in another respect]. That is why one cannot say that some thing which is described as human is described as triangle.

[T4] Al-Sāwī, *Baṣā'ir, Manṭiq*, 35.21–36.10

[***the subject and predicate need not have the same meaning***]

When we judge one thing to hold of another and we say that it is such-and-such, what we are judging is called the predicate and that of which we judge it is called the subject. It is not a condition for the predicate that its meaning (*maʿnā*) be the same as that of which it is predicated, that is, the subject. For were that the case, there could be predication only in the case of synonyms (*al-asmā' al-mutarādifa*), these being different words that are subject to the same meaning, like "human (*insān*)" and "person (*bashar*)." What *is* a condition [for the predicate] is that the predication be correct, even if the true reality of the predicate is not the same as the true reality of that of which it is predicated. Thus, when we say "human is risible" we do not thereby mean that the true reality of human is the true reality of risibility. Rather, we mean that something which is a human and has the attribute (*ṣifa*) of humanity also is a risible and has the attribute of risibility—regardless whether its true reality in itself is the predicate, the subject, or a third thing distinct from either of them. [...]

[***derived predication of attributes: 'is' of identity and 'is' of belonging***]

[36.6] You have, then, learned that the universal predicated of something might be either the true reality of that thing or might be something else, other than its true reality. Let us explain the options in detail. *We say then*: a predicated expression refers either to the true reality of something, or to an attribute of it. By "attribute (*ṣifa*)," I mean something like "body (*jism*)" or "white (*abyaḍ*)" in relation to human, not something like whiteness (*bayāḍ*) or corporeality (*jismiyya*), since something like whiteness cannot be predicated of human other than by way of derivation, that is, one derives from it a name [namely "white"] and then predicates it, as we will explain further.

[T5] Abū l-Barakāt, *Muʿtabar*, vol. 1, 12.18–13.3

[***predication by way of mental concepts***]

When one says that such-and-such is so-and-so, like "Zayd is human," one says that the thing called "Zayd" is the same as the thing called "human"; or rather, the thing whose meaning (*maʿnā*) in the mind is the meaning called

"Zayd," is the same as the thing whose meaning in the mind is called "human." That which is said (*maqūl*) having a meaning like "human" is called "predicate," while that which is said having a meaning like "Zayd" is called "subject"; the statement (*qawl*) which means the procedure (*maṣdar*)—as opposed to ["statement" in the sense of] a composite verbal expression—is called "predication."

[***derived predication***]

The meaning of the predicate is sometimes predicated by its name, and is applied [to the subject] by itself. Then one says, "the subject is the predicate," as one for instance says "Zayd is human." This is called synonymous predication, since the predicate is the form of the subject and its meaning. Sometimes though, a predicate is applied by way of an expression that is compounded from its name and an expression that conveys a relation (*nisba*) [13], since [the relation] is a form inhering [in it], that is related to the thing [in question] in such a way that it belongs to it and is in it without being its own form as such (*sūrat dhātihi*). This is how whiteness is predicated of Zayd. For one says "Zayd is white" or "possesses whiteness," "is rational" or "possesses rationality." Predication in reality is a connection (*iḍāfa*) of the predicated meaning to its subject, and considering (*iʿtibār*) [the predicate] to hold of [the subject] in the mind.

[T6] Abū l-Barakāt, *Muʿtabar*, vol. 1, 21.18–22.8

[***predication as belonging: reformulation of derivative predication***]

Some scholars [i.e. Avicenna] rejected those who gave whiteness as an example. *They said*: that [sc. "whiteness"] is an accident, whereas this [sc. "white"] is an accidental attribute (*waṣf ʿaraḍī*). That [sc. "whiteness"] is not predicated of things in the sense that it *is* them. For instance, one does not say that human is "whiteness," ones says instead [that human is] "white," and this [sc. "white"] is predicated, so that one says: "human is white." [...]

[21.22] The consideration of this issue is among the most subtle topics of investigation. For when someone says "Human is white," this comes to the same thing as someone saying "Human possesses whiteness" or "Whiteness belongs to human." It isn't comparable to the predication "Human [22] is a body," since "body" is predicated of "human" in itself, whereas whiteness is connected to [human] by being related to it. "White" just means "possessing whiteness." So in reality, it is whiteness that is the predicate. The expression "possessing (*dhū*)"

stands for a relation (*nisba*) by which predication arises. Then one substitutes for two words [sc. "possessing whiteness"] just one word [sc. "white"] that refers to both of them by way of composition, as we said before about the features of derived names.[2] Thus, the predicate is really "whiteness." "White" meanwhile is a word that indicates the predicate and the relation by which predication arises. So the word "white" does not refer to a single meaning, which is predicated. Rather, it refers precisely to the predicate and that by which it is predicated, namely a relational term. Thus, whoever takes the whiteness of human as an example of such a predicate makes no mistake. There is no difference between "white" and "possessing whiteness," apart from a merely verbal one; there's no [difference] in the meaning that is understood. In both cases the predicate is "whiteness" and nothing else.

[T7] Al-Rāzī, *Manṭiq al-Mulakhkhaṣ*, 33.9–35.11

[***predication analyzed in terms of object and attribute***]

Every universal is by nature a predicate, and every particular is by nature a subject. For the universal is the "extent (*qadar*)" that is shared between numerically distinct objects. That shared [extent] must be either object (*dhāt*) or attribute (*ṣifa*). If the former, then it is predicated in a synonymous way. If the latter, then it is predicated in a derivative way. The particular, though, is a concrete individual (*al-mushār ilayhi*): it must be a subject in relation to the universal. So let's discuss the true nature of predicate and subject. [...]

[***tautology objection***]

[34.3] *It might be asked*: when we say "every C is B," if the true reality of C is the same as the true reality of B, then C and B are two synonymous (*mutarādif*) expressions. So really there is no predication here and there is no subjecthood. Or they have different true realities, but then one cannot say that one of them "is (*huwa*)" the other, because one thing cannot be the same as something else.

The answer is: If one thing is attributed to another, then [either]: (a) the object of attribution is predicated of the attribute, as when we say "The movable is body," meaning that the true reality of that thing to which the attribute

2 Cf. the discussion of derived names as including the copula or nexus (*nisba*) in our chapter in this volume on the Proposition and its Parts.

of motion belongs is body. Or (b) the attribute is predicated of the object of attribution, as when we say "Body is movable," meaning that body has motion attributed to it. The former is called synonymous predication, the latter derivative.

[35] *Let it not be said*: the problem remains, since if we say that body has motion attributed to it, then either the meaning of "body" is the same as the meaning (*mafhūm*) of "that to which motion is attributed," and the problem comes back, since the meaning of "that to which motion is attributed" is "something (*shayʾ mā*) to which motion belongs," which doesn't show whether this thing is a body or not, unless one were to grasp that through a separate inquiry. Alternatively [the meaning of "body" is different from the meaning of "that to which motion is attributed"], but in that case, [again] one cannot say that the one is the other.

For we say: the meaning of "the movable" is "something to which motion belongs," not in the sense that motion is ascribed (*isnād*) to "something" in an unqualified sense, just insofar as it is something. Otherwise "the movable" would [already] be a proposition, and one could not say "Zayd is movable," because one single thing cannot be ascribed to two items in one and the same statement. Rather [by "something to which motion belongs"] we intend that motion belongs to some concrete thing in itself, which is unknown to the speaker. So when we say "Body is movable" we explicate the quiddity of that "something" to which motion belongs, by saying "body."

[T8] Al-Suhrawardī, *Mashāriʾ*, *Manṭiq*, 43.9–47.3

[***the predicate is the unqualified genus, not the genus as part of the species***]

A part cannot be predicated of the whole. There is however a distinction to be made here. Whatever is like animality [44] can be predicated in only one way. Namely, as they said, to take unqualified animality, which has the same relation to both human and horse. When one predicates it,[3] what is meant is that the animality that is specified by rationality corresponds to the unqualified animality that relates equally both to it [sc. human] and something else [sc. horse]; not in the sense that it exists in human, since [in that case] it would be a part [of

3 Here the masculine pronominal suffix *-hu* should be corrected to *-hā* to agree with *ḥayawāniyya*.

human]. Here, the predicate is the correspondence to [unqualified] animality, not the animality [as such].

[***in general parts are not predicates***]

As for distinct parts, like a wall or a roof, there is no way to predicate them as such. One does not say "House is wall," regardless whether one takes it as specified or as unqualified, unless one took it as [meaning] "possesses a wall." Nor can one say, "Human is soul." Nor in fact can one say "Human is body," as mentioned just now with house and wall. As wall does not correspond to the whole quiddity of house, so body does not correspond to the whole true reality of human, but rather to one of its parts. So the whole does not have [the part] as an attribute, nor is the whole identical to the part. The part is made an attribute for the whole only in a figurative use of language. But we will return to this issue.

[***particulars are never predicates***]

You should know that a particular, that is, that whose meaning (*mafhūm*) in itself excludes sharing, cannot be predicated. A general reason for this is that a subject has a predicate attributed to it, but an individual in itself cannot be an attribute of anything. A more specific reason is that, if the subject of a particular were universal, then something that may be conceptualized as shared would be confined to that which is not [shared],[4] as we mentioned elsewhere. In any case, [45] the subject is either naturally so, like human, when one predicates "capable of writing" of it, or unnaturally so, when it is the other way around. And the individual is naturally a subject for all universals, however one takes them. So, the only remaining option is that the subject of [a particular] is particular, and we have already explained that whether it is identical to it or not—either way, prediction does not hold.

Even if one says for example, "This risible is this capable of writing," it is still not correct [to make the particular a predicate]. For that which is risible, as such, is not capable of writing. One cannot say that the one is an attribute of the other, because the fact that it can be pointed out (*al-ishāra*) excludes that it is its attribute. Even if one points at the same thing when saying both, one and the same thing cannot be identical to both, since one and the same thing in itself, insofar as it is one, cannot be two things. If one however takes [that

4 For example we cannot predicate Zayd of human, because human applies to many things, but Zayd does not.

proposition] to mean that both are *attributes* of this one thing, meaning, for instance, that this human, who is risible, is identical to the human who is capable of writing, then both "risible" and "capable of writing" are universal. But that's not what we're talking about [i.e. because we are asking whether a particular can be predicated, not a universal]. […]

[46.3] You should know that it is wrong when some people say: "Human is risible" implies a third thing, of which both are attributed, just as with "The risible is the capable of writing." (They mentioned this when talking about the case of *dictum de omni*, saying that "Every human is risible" means "Each item that has human as an attribute, is risible.") So there would be three things in this case too: that to which the subject is attributed, the subject, and the predicate, as happened there [sc. with "The risible is the capable of writing"].

For when we say, "The risible is capable of writing," without any quantifier and without pointing to any concrete instances, then a third thing is indeed required. But when we say "Human is capable of writing," this is not the case. Moreover, we have already refuted the opinion of those who hold that in a case like this, "thing" or "object" without qualification is that to which humanity and risibility are attributed. The reason was that thingness, and something's being an object or a true reality, are not basic items (*umūr muta'aṣṣila*) among concrete individuals, such that humanity or substantiality could attach to them. Rather, these concepts (*i'tibārāt*) attach to quiddities that have been specified by their true realities. Thus, [47] first human is real, and only then does one say "thing" of [that human]. As for *dictum de omni*, risibility also attaches to concrete humans in virtue of humanity. This is different from the case of "Every risible is capable of writing," since the capacity to write does not attach to single [individuals] with the risibility *because* they have the risibility.

[T9] Al-Khūnajī, *Kashf al-asrār*, 24.9–25.2

[*derivative predicates are not real predicates*]

The Master [sc. Avicenna] said that predicating the universal of the particular is considered as synonymous predication (this is when one thing is truly (*bi-l-ḥaqīqa*) predicated of another, for instance "Human is an animal") and not derivative predication. He explained the latter as a case where something is not truly predicated; rather the predicate is [merely] related (*mansūb*) to it, as whiteness in relation (*bi-l-nisba*) to human. For one does not say "Human is whiteness," but rather "… possesses whiteness," or whatever captures the

same meaning in a single word that is derived from whiteness, hence: "Human is white."

[*against Abū l-Barakāt's argument at T6*]

The one who objected to this and fancied that "possessing" is due to the relation, which is extrinsic to the predicate, while the true (*bi-l-ḥaqīqa*) predicate is whiteness, was wrong. For the relation that is extrinsic to the predicate is the one through which the predicate is connected by way of a copula [25] to the subject. But not every relation is like this. For when one says "Human possesses money" or "… [is] father of so-and-so" or "… [is] above or under such-and-such," [these] relations are predicates.

[T10] Al-Abharī, *Daqā'iq al-afkār*, 527.14–16

[*the particular can be predicated accidentally*]

It has been said that the particular cannot be predicated. If what is intended by this is that [the particular] is not a *natural* predicate, this is true. But if it means that [the particular] cannot accidentally be a predicate at all, this is not so. For human can accidentally wind up being Zayd, and it is fine to say, "Some human is Zayd." So "Zayd" is predicated of [human], though accidentally, not naturally.

[T11] Al-Abharī, *Muntahā*, 216.20–217.2

[*parts can be predicated*]

No one should argue as follows: when we say "Human is an animal," the predicate is either (a) "existent animal," which is absurd, since everything existent is individuated, and nothing individuated can be predicated; or (b) the predicate is "animal existing in the mind," but this is also absurd, since an individual form is in an individual soul and it cannot be predicated either. Nor can (c) animal as such (*min ḥaythu huwa*) be the predicate, since it is a part of this animal and no part can be predicated.

For we say: we do not concede that no part can be predicated. For if parts are not distinct [from the whole] in [217] extramental existence, and one takes them in such a way that their relation to all particular instances is the same, then they can be predicated. This is how "being a color" is predicated of "blackness" when we say "Blackness is a color" [sc. because color is the genus of black, and hence a "part" of it].

[T12] Al-Abharī, *Khulāṣa*, 125.2–5

[***derivative predication***]

One of them [sc. Abū l-Barakāt] said that, in reality (*bi-l-ḥaqīqa*), the predicate is whiteness, while "possessing" belongs to the relation of the predication to the subject, which is extrinsic to the predicate.

But this is wrong, since the relation that is extrinsic to the predicate is the one through which the subject is connected with the predicate by way of a copula. This relation [sc. that of possession] however is not like that, and hence it is not extrinsic to the predicate.

[T13] Al-Abharī, *Khulāṣa*, 125.7–20

[***tautology objection***]

It is considered that the predication of the universal of the particular is true (*ḥaqīqī*) prediction. But one might doubt this: when we say "C is B," if the true reality (*ḥaqīqa*) of C is the true reality of B, then they are synonymous (*mutarādifāni*) words. So there is neither predication here, nor any thesis. If however they are distinct, then it is not true that C is B, because nothing can be identical to anything other than itself.

But we say: we do not concede that it is untrue that C is B. For when we say "C is B," we mean that the thing of which it is true that it is C is identical to the thing of which it is said that is B.

[***against predication as unity in existence***]

Some of them responded to [*this problem*] *by saying*: when we say "C is B," this means that they are unified in existence.

But this is false. For if "Zayd is human" were true in the sense of unity in existence, the existence of human would not be prior to the existence of any individuated human, and the existence of a part would not be prior to the existence of the whole. Also, one and the same existence would need to be an accident of two different quiddities.

[***predication as correspondence to a part***]

Another response to [*the same problem*]: when we say "Zayd is human," we mean by this that animal corresponds to him.

But this calls for further inquiry. For we do not concede that animality corresponds to *him*. Rather it corresponds to the *animality* which is in him.

[T14] Al-Ṭūsī, *Sharḥ al-Ishārāt*, vol. 1, 141.10–142.3

[***synonymous predication and extensional identity***]

The predication explained in this section is predication of the form "it is it (*huwa huwa*)" and this is called synonymous predication … [141.14] This sort of predication requires that the subject and the predicate are united in one respect, but distinct in another respect, with the respect in which they are united being different from that in which they are distinct. That through which they are united is one and the same thing. […] [141.17] That through they are distinct may, by contrast, be two different things, both of which are related to that through which they are united. For instance, rationality and risibility, which are both related to human through the expression "the rational" and "the risible." In light of which, if one makes [one] a subject and [the other] a predicate, then that through which they are united will be some third item different from both. This is what [Avicenna] meant when he said "in itself it would be a third thing."

[142] [That through which they are distinct] may also be some one thing that is related to that through which they are united, as when triangularity is related to shape and the combination is considered to be triangle. If one then makes that combination a subject, then that through which they are unified will be a predicate in its own right, while being separate from that through which they are distinct; as in "Triangle is a shape."

[T15] Al-Kātibī, *Munaṣṣaṣ fī sharḥ al-Mulakhkhaṣ*, 16^{v}8–12

[***predication of the particular is impossible***]

We say: it is impossible to predicate a particular of some other meaning (*mafhūm*). If the particular were predicated of something else, then that other thing would be either (a) particular or (b) universal. (a) The first option is absurd, because (a1) if that particular were identical to it, that would be a case where something is predicated of itself. And (a2) if it were some other particular, that would also be absurd. For particular individual instances of the same species are distinct from one another, and none of them can be predicated of any other instance of the same species (obviously, [neither] can it

be predicated of something outside its species). (b) The second option is also absurd. For if a particular were predicated of a universal, then that universal would need to be limited to that particular. This however is absurd, since it implies that something that can be shared becomes something that cannot be shared.

[T16] Ibn Kammūna, *Sharḥ al-Talwīḥāt*, vol. 1, 35.11–36.2

[*predication requires two distinct conceptualizations, so must be extensional identity, not essential identity*]

A judgment as to the relation between one item and another requires two conceptualizations (*taṣawwurayn*): that of the subject about which one makes a judgment, and that of what is judged to hold of it. For the subject of the judgment, as such, is distinct from what is judged to hold of it, as such. This is self-evident. That's why [al-Suhrawardī] says, "assent requires two conceptualizations." If the true reality of both items were the same, then assent would not require more than one conceptualization; but this is not so.

One cannot object to this on the grounds that synonymous (*mutarādifa*) names are predicated of one another, as in "Human is person." For "person" is predicated of "human" only by way of a supplemental addition, without which there could be no predication. The supplement in this case is designation (*tasmiyya*). It is like saying "Human is designated as person." In this and similar cases, the goal of predication is the idea of [36] designation. Otherwise it would be a tautology. If it were not for the aforementioned supplement, it would be like saying "Human is a human" or "Person is a person," which everyone knows is useless.

[T17] Ibn Kammūna, *Sharḥ al-Talwīḥāt*, vol. 1, 36.8–19

[*predication explained with the notion of* ʿunwān]

The subject may sometimes (a) signify (*ʿunwān*) something else, or (b) it may not signify anything [else]. (b) The second case is for instance "Human is risible," since "human" in this example is a sign of itself, without being truly [said of] anything else. It is that thing of which one says: it is human. (a) As for the first case, when [the subject] signifies something else, then that which the subjects signifies is either (a1) the predicate or (a2) something else. (a1) If it is the predicate, that's like "Risible is human," which is the conversion of the previous

example. Here "risible" is truly [said of] something other than "the risible," and "risible" signifies it. This thing is "human," which is the predicate, and not some other item distinct from both of them. (a2) If however what the subject stands for is something other than the predicate, then it is a third thing, as when we say "risible is capable of writing." For "risible" signifies something else, namely "human," it being distinct from both the subject ("risible") and the predicate ("capable of writing"). These are the three classes of predication.

[T18] Ibn Kammūna, *Sharḥ al-Talwīḥāt*, vol. 1, 37.12–17

[***what underlies predication is a concrete thing***]

Then [al-Suhrawardī] answered this doubt by saying that, [with regards to] thing-ness, and likewise, something's being a true reality, if one were to say that the meaning of the aforementioned example [sc. "Human is substance"] were that the true reality of which "human" is true may rightly be called "substance," for instance, then neither substantiality, nor humanity, nor anything else would attach to [thing-ness or being a true reality] as two original things (*aṣlayn*). Rather, [first] humanity is realized, or anything else that is said to be a thing and a true reality, and only after that realization may one say that it is a true reality or thing. Both of them, "thing" and "true reality," are said of [items that are already] originally true realities (*al-ḥaqā'iq al-muta'aṣṣila*). Those true realities are not said of either of them. This is obvious.

[T19] Ibn Kammūna, *Sharḥ al-Talwīḥāt*, vol. 1, 38.17–21

[***against predication of the particular***]

Why one cannot make [the subject] a universal [while the predicate is a particular]: the reason is that, even if one were to specify it with "some," or some other specifying quantifier with the same meaning, [the subject] will still not leave universality. That is, its very meaning will not exclude being shared. Alternatively, one might not specify it [with "some"], but in that case the subject (which may be conceptualized as being shared) has been confined to the predicate (which, by assumption, is not like this). For instance if we say "Human is Zayd," without specifying the universal by "some"; or "Some human is Zayd," if one does specify. But this [quantifier] "some" is nothing concrete, which would depart from universality.

[T20] Al-Ḥillī, *al-Jawhar al-naḍīd*, vol. 1, 13.20–14.3

[***synonymous vs. derivative predication***]

When we say "human is risible," "human" is the subject and "risible" is the predicate. This predication is called synonymous and is predication of identity (*huwa huwa*), meaning that the object (*dhāt*) [indicated by] the subject is the object [indicated by] the predicate; one can say that the subject is the predicate. [14] There is another kind of predication that is called derivative. This is predication of possession (*dhū huwa*), like the predication of "risibility" of "human," meaning that one can derive a name for [the human] from it [risibility], and predicate it of him synonymously. So the derived is said to be predicated synonymously, whereas that from which it is derived is said to be predicated derivatively.

[T21] Al-Ḥillī, *al-Jawhar al-naḍīd*, vol. 1, 14.10–14

[***predicates are always more general***]

You should know that the more general may be more general in respect of its existence in both the instances of a more specific [class] and further instances besides, like "animal" and "human" [that is, "animal" belongs to the instances of more specific class "human" and also to instances of e.g. "horse"]; and it may be more general in respect of the meaning (*mafhūm*) alone, like "risible." For its meaning is "something that possesses risibility," regardless whether this thing is a human or not. For the derived name [sc. "the risible"] does not refer to any specific true realities, and the fact that that which is risible is human is acquired from beyond the meaning. Hence, "risible" is, as far as its meaning goes, more general than "human," but when it comes to the instances, they have the same extension.

CHAPTER 8

The Proposition and Its Parts

Aristotelian and Avicennan logic has a good deal to say about individual sentences. Or rather, in technical parlance, about the "proposition (*qaḍiyya*)." This is a topic that receives extensive attention in post-Avicennan philosophy.[1] And for good reason, since the proposition is both the building block of the syllogistic argument, as it can serve as the premiss of an argument [T2], and the bearer of truth or falsehood. "Truth-aptness" is indeed key to Avicenna's definition of the proposition as "that whose utterer is said to be speaking truly or falsely" [T4]. This would apply to hypothetical propositions (e.g. "if the sun has risen it is day") as well as categorical ones, where one term is simply predicated of another (e.g. "human is animal"). This same idea is expressed by saying that the proposition is a "statement (*qawl*)" that is "declarative (*jāzim*)" [T1, T9] or "assertive (*khabarī*)," that is, makes a "report (*khabar*)" about something.

Already we run into a problem here, which was articulated by Fakhr al-Dīn al-Rāzī. He argues that any attempt to define "proposition" will be circular. For example, if we define it as a statement that can be true or false, and then define truth and falsehood by appealing to the notion of a proposition that does or does not correspond to reality [T14]. He simply bites the bullet here, admitting that "assertion" and its synonyms, like "judgment (*ḥukm*)," are indeed indefinable. But this is unproblematic since we know immediately what a proposition is, and giving a definition would be superfluous anyway. This fits with his reservations about the whole endeavor of offering definitions, which are covered elsewhere in this volume.[2] Al-Kātibī disagrees, to some extent: one might define proposition in terms of truth and falsehood without needing to define truth and falsehood at all. But he winds up accepting that the definition of "assertion" is a nominal one, and not an articulation of a true nature or essence [T28]. Al-Ḥillī similarly admits that "proposition" is indefinable but adds that even if

1 And not only in our period; for later discussions see A.Q. Ahmed, "Interpreting Avicenna: Urmawī/Taḥtānī and the Later Logical Tradition on Propositions," *Documenti e studi sulla tradizione filosofica medievale* 21 (2010), 313–342; A.Q. Ahmed, "Systematic Growth in Sustained Error: A Case Study in The Dynamism of Post-Classical Islamic Scholasticism," in A.Q. Ahmed, M. Bonner, and B. Sadeghi (eds.), *The Islamic Scholarly Tradition: Studies in History, Law, and Thought in Honor of Professor Michael Allan Cook* (Leiden: 2011), 343–378.

2 See our chapter Criticism of Definitions and Meno's Paradox.

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you don't need a true definition of something, you might still be in danger of confusing it with other items. The nominal definition would enable us to avoid that [T36].

Given then that a proposition is a truth-apt statement, how do we go about producing such a statement? As Avicenna says, it is not enough simply to juxtapose terms, like by saying or thinking "human animal" [T1]. Rather there needs to be a third item in addition to the two terms, which links them. This was known in Latin medieval parlance as the *copula*, a word that has passed into English logical terminology. Philosophical interest in the copula seems to have increased over time in the post-Avicennan period. Al-Khūnajī was the first to devote a separate chapter to it, but already earlier thinkers like al-Sāwī and al-Rāzī had much to say on the subject. Notably, al-Rāzī offers a kind of "hylomorphic" account of the unity of the proposition, according to which the copula adds the "form" of the aforementioned predicative relations to the two terms, which are like the "matter" [T15].[3]

In Arabic the word for copula is *rābiṭa*, meaning "bond" or "connection." It is used to refer to the linguistic item (like "is" in English, and e.g. *yūjadu* or *huwa* in Arabic) by which it is indicated that the predicate is said to hold of the subject. We also find the word *nisba*, which we mostly translate in this chapter as "nexus" to mark it as a technical term. It is standardly used to refer to the link between subject and predicate signified by the copula. But *nisba* is also one of the standard words in Arabic for "relation," so when you read our texts speaking of a "nexus" between two terms, you should bear in mind that they are also saying there is a relation between them. This observation helps to explain why it was seen as plausible to suppose that the copula stands for not one, but two "nexus" in each predication: the "relation" (*nisba*) of human to animal is not the same as the "relation" of animal to human. [T15]. Modal considerations help to illustrate this idea: human is *necessarily* animal, but animal is only *possibly* human [T15, T35, T37]. This shows that the two relations are distinct.

After presenting this idea as he finds it in al-Rāzī [T29], al-Kātibī raises a doubt against it: in general "X is Y" just means that everything true of X is also true of Y [T30]. Since this is a symmetrical relation, the nexus would not be double. So al-Kātibī seems to be suggesting that the copulative relation is like

3 For hylomorphic analysis in the Aristotelian tradition, especially medieval Latin logic, see C. Dutilh Novaes, "The Different Ways in which Logic is (Said to Be) Formal," *History and Philosophy of Logic* 32 (2011), 303–332; "Form and Matter in Later Latin Medieval Logic: the Cases of *Suppositio* and *Consequentia*," *Journal of the History of Philosophy* 50 (2012), 339–364; "Reassessing Logical Hylomorphism and the Demarcation of Logical Constants," *Synthese* 185 (2012), 387–410.

the relation "equal to," whereas al-Rāzī sees the copula as masking two relations along the lines "child of" and "father of." This turns out not to be al-Kātibī's considered view, though. Al-Rāzī had also noted that only one of the two relations is really constitutive of ("essential for") the proposition, because what makes a statement a proposition is the subject's receiving the predicate, not the other way around. Al-Kātibī rejects this, but not by questioning the duality of the nexus; instead, he says it could more reasonably be the relation of predicate to subject that is constitutive [T31]. Then, when al-Kātibī comes to give us his own opinion, he accepts a kind of duality for the nexus after all. Denying this would, he says, abolish any distinction between the subject role and the predicate role [T32]. Still, each relation is "potentially" the other, meaning simply that the terms can be swapped so that subject becomes predicate and vice-versa ("animal is human" instead of "human is animal"). A modification of this view can be found in al-Urmawī [T35], who says that the copula typically signifies two asymmetrical relations, but it depends on the example we choose. The copulative relation is symmetrical in concrete cases ("this X is this Y"), which seem to be statements of identity rather than predication proper.[4]

The upshot, at any rate, is that on the level of language categorical propositions need not just two terms but also a copula. This means that on the level of meaning a proposition has at least three parts: that for which the subject stands, that for which the predicate stands, and the "relation" between them [T1, T5, T33]. Sadly though, things are not so simple. Unlike English, Arabic allows for truth-apt sentences that have no explicit copula, like *Zayd kātib* which only includes two terms, "Zayd" and "writer," but *means* "Zayd is a writer" [T6]. Beginning with Avicenna, our authors are aware that this is not true of all languages.[5] They refer to Greek and Persian as examples of languages that work differently [T4, T13, T33, T36, T37]. In particular, Persian is like English in that there

4 Albeit that the relationship between identity and predication is itself a contested one. See our chapter in this volume on Predication.

5 Al-Fārābī was also acutely aware that Arabic lacked a copula. He thought that this was a defect of the Arabic language and proposed using "*mawjūd*" as an artificial copula. He was also crucial in developing the theory of derived nouns as containing the signification of the nexus, and he has produced a sophisticated theory in which the copula *mawjūd* in one of its senses has no reference, but signifies a secondary intelligible, namely the predicative relation. See especially Abū Naṣr al-Fārābī, *Kitāb al-Ḥurūf*, ed. M. Mahdi (Beirut: 1970), 110–128, and S. Menn, "al-Fārābī's *Kitāb al-ḥurūf* and His Analysis of the Senses of Being," *Arabic Sciences and Philosophy*, 18 (2008), 59–97, especially page 82. It appears, however, that much of Fārābī's theory from the *Kitāb al-Ḥurūf* and from his commentary on the *De interpretatione* was ignored by the later tradition. For a study of discussions on the semantic role of the copula in the Arabic tradition, see D. Klinger, *Being Another Way. The Copula and Arabic Philosophy of Language, 900–1500* (Oakland: 2024).

must be a copula. It may seem odd to English speakers that the early Arabic philosophers—for lack of an equivalent to the Greek word *esti*—stipulated that the role of the copula can be played by a pronoun. Thus if one wants to make the copula explicit in the above example, one could say *Zayd huwa kātib*, very literally "Zayd he writer" but with the same meaning, "Zayd is a writer." Less odd would be the fact that the copula can be "hidden in a verb," as when one says "Zayd writes." Here the copula is in some sense implicit (as if one took "writes" to mean "*is* writing" or "*is* a writer"). This might help to explain why the copula also fails to appear in a sentence like the one just considered, where we had the derived noun "writer (*kātib*)" in the predicate slot. The situation here is just like case with a verb, as explained at [T7] and [T18], with commentary on the latter passage at [T21].

The standard view of the parts of the proposition, then, is that strictly speaking it should have the three aforementioned parts and thus be "ternary." When one does leave the copula implicit, the proposition is "binary," because it has only two explicitly expressed parts, namely the two terms [T1, T6, T7, T13, T33, T34, T37]. But al-Rāzī raises a concern here. In cases where the copula is implicitly present, namely where the predicates are verbs or derived nouns, won't it be redundant to make the copula explicit? For instance if *Zayd kātib* already means "Zayd: he is a writer," then you'd think that *Zayd huwa kātib* would have to mean "Zayd: he is a writer, he is" [T16]. Thus one should *only* introduce the copula explicitly when the predicate is genuinely incomplete, like *Zayd insān* ("Zayd [is a] human"). Al-Khūnajī rebuts this by distinguishing between the two roles that can be played by the Arabic pronoun. The concealed pronoun in *kātib* will not be a copula if there already is an explicit *huwa* to play that role [T17], reprised by al-Urmawī at [T34]. Arabic usage in the Qur'ān confirms that this is acceptable.

Nor are we at an end with the question of how many parts belong to the proposition. With the copula we've just seen that a part could appear only implicitly, but sometimes be made explicit. Again it is al-Rāzī who makes trouble by asking whether there is in fact a *fourth* part which is always at least implicitly present, namely the modal operator [T16].[6] When we say "human is animal" this is a necessary truth, so "necessarily" is tacitly present; and likewise for a contingent proposition. Al-Ḥillī accepts this, contrasting the modal operator with quantifiers like "all" or "some," which are *not* tacitly present and so need

6 Some later logicians would—similar to the modern distinction between judgeable content and the judgment itself—distinguish between the nexus of a proposition and its judgment, making the parts of the proposition four. See K. El-Rouayheb, 'Does a Proposition Have Three Parts or Four? A Debate in Later Arabic Logic,' *Oriens* 44 (2016), 301–331.

to be explicitly introduced [T37]. While some features of propositions may not be conspicuously expressed on the level of language, in linguistic propositions words may occur that are not integral to the predicative relation expressed in them. For example, al-Suhrawardī mentions a class of items that would be called "syncategorematic" in Latin medieval logic, like *innamā* ("nothing but"). These are added as auxiliaries to the basic proposition and are thus its "concomitants" [T12].

Finally let us turn to a set of issues concerning negation.[7] Denials are seen as in some sense parasitic on affirmations, as they are formed by adding a negative particle to affirmations. Abū al-Barakāt goes so far as to say that this means negations are only "metaphorically" predications [T10]. A complication is that there are two ways of forming negative propositions. In one case we negate the copula ("not: Socrates is a horse") in another, the predicate ("Socrates is a non-horse"). The latter is called a "metathetic (*ma'dūla*)" proposition, among other things [T4, T11]. Since these two kinds of negation are easily confused our authors take pains to explain the difference in negational scope, which is not merely formal. For instance metathesis may have a more general meaning [T8], because negating the copula ("Zayd is not just") suggests that the predicate does not belong to the subject at all, whereas asserting a negative predicate ("Zayd is non-just") could be true in cases where the predicate does belong to the subject, but imperfectly (e.g. if Zayd is somewhere on the spectrum between perfect justice and utter injustice).

Things get really interesting with negation when we come to al-Abharī's discussion at [T19]. He proposes that the subject of a true proposition could be something impossible, giving the example "Whatever is a human and not an animal is a human." This is a pretty strange thing to say, obviously, but it does look true: whatever else we say about a human that is not an animal, surely it is at least a human. To this one might be tempted to object that no such thing exists, so there are no true propositions about it. But Avicenna had provided for propositions about subjects that exist only in the mind [T3]. If one can entertain the notion of a human who is not an animal, shouldn't one be able to assent to propositions about it? But as al-Abharī himself warns, this line of thought could lead to highly counterintuitive and undesirable consequences [T19]. "No human is a stone" looks true, but turns out not to be, because there is the following true proposition about an impossible object: "The human who is also a stone is a stone." Of course the problem only arises for mental, not

7 For the topic in Avicenna see J. Kaukua, "Avicenna on Negative Judgment," *Topoi* 39 (2020), 657–666.

extramental subjects, so one would be on safe ground saying "No extramentally existent human is a stone" [T20]. But still!

Solving this problem means digging further into the referent of the subject term. Al-Abharī says at the start of [T19], just before raising the prospect of impossible subjects, that we might form propositions concerning three types of subject: those that extramentally exist, those in the mind, and then subjects "in the true sense," meaning subjects taken with reference to the essence alone, paying no heed to existence at all. Al-Ṭūsī offers an elaborate set of reflections on this [T22, T23, T24, T25, T26, T27]. The key move is best explained at [T25]: most scholars have rejected impossible subjects because they cannot be subjects of a true absolute proposition, an absolute proposition being like al-Abharī's "true sense": we look only to the meaning of the term and not to its existence, whether mental or extramental. At this fundamental level we can already rule out affirmative truths concerning humans that are stones and the like. Al-Ṭūsī also considers the case of extramentally non-existing (but possible) objects. He says that metathesis ("Zayd is non-just") is false for the extramentally non-existent, because here one is affirming a predicate of a subject, even though the predicate has negative meaning—and one cannot affirm anything of the non-existent. By contrast "simple negation" is allowed for the non-existent: one can say "not: Zayd is just" and this will be true if Zayd does not exist.

Texts from: Avicenna, Bahmanyār, al-Sāwī, Abū al-Barakāt, al-Suhrawardī, Fakhr al-Dīn al-Rāzī, al-Khūnajī, al-Abharī, al-Ṭūsī, al-Kātibī, al-Urmawī, al-Ḥillī

[T1] Avicenna, *Shifāʾ, Manṭiq, ʿIbāra*, 37.6–38.11

[*the proposition and the copula*]

Every declarative statement, be it categorical or hypothetical, requires, in the language of the Greeks, the use of hyparctic verbs (*al-kalimāt al-wujudiyya*); these are the verbs which signify a nexus (*nisba*) and a time, without however the meaning connected to the indeterminate subject actually obtaining in them, if the root in itself is not a verb.

This remains the case for hypothetical statements in the Arabic language: in connective statements we say "if it is (*kāna*)," "whenever it is," "so long as it is," and "even if it is." Or in non-connective ones, "either it is (*yakūnu*) like this, or it is like that." We always have to use the hyparctic verb [i.e. *kāna* or *yakūnu*] in both cases.

In the language of the Greeks, this was also the case for categorical statements: they had to say "Zayd was X" or "Zayd is Y." But this is not necessary in the language of the Arabs. With regard to the matter itself, though, the categorical proposition must be completed by three things. These are: [38] the meaning of the subject, the meaning of the predicate, and a nexus between the two. [Mere] juxtaposition of the two meanings in the mind does not make them a subject and a predicate in [the mind]; rather the mind needs to believe that there is, along with that, a nexus (whether affirmative or negative) between the two meanings.

If I want it to capture what is in the mind, the utterance too needs to involve three significations: the signification of the meaning belonging to the subject, another of the meaning belonging to the predicate, and a third for the relation and the bond (*irtibāṭ*) between them. Just juxtaposing "human" and "animal" in the mind and considering both, insofar as this is human and that is animal, does not render either one to be a predicate or subject. […]

In the case [where the copula is omitted], one may still signify this meaning through spoken signification, even if there was no simple utterance dedicated just to this.

[T2] Avicenna, *Shifāʾ, Manṭiq, Qiyās*, 19.4–11

[***the proposition as a premise***]

We should explain what is a "premise," what is called a "term (*ḥadd*)" of a premise, and what is said of the whole, whether affirmatively or negatively, and of the part. Also, what a syllogism is, and which of these are complete and incomplete. After that, we will begin to distinguish the kinds of syllogisms and learn what notions attach to them.

That thing which was called a declarative statement and a proposition in *On Interpretation* becomes, once it is made part of a syllogism, a premise. The premise is thus a declarative statement that has been made part of a syllogism. But this is not a specific difference that is a concomitant of the premise; rather, it is an accidental notion, so that if we imagine a premise by itself, it ceases to be part of a syllogism, without its essence having to perish, and while remaining a declarative statement.

[T3] Avicenna, *Shifāʾ, Manṭiq, Qiyās*, 19.16–21.12

[***the quantified premise and the extension of the subject term***]

Just as propositions are quantified, unquantified, and particular, so are premises. We ought to verify [20] the state of the quantified [premise]: we ought to verify first the quantified premise that is a universal affirmation, like "Every A is B," and say: we must first learn the meaning of "every such-and-such is so-and-so". [The meaning of such phrases] is that each and every instance [of such-and-such] is [so-and-so]—and not the whole totality together, nor the universal, but rather every single one of its instances (*afrād*) so that not one thing is left out. The judgment is not about the totality, but about the instances. For [something] may be said about the totality that is not said about the instances. The judgment is not about the universal "human" insofar as it is a universal; it must be a judgment of the particulars, as you have learned above. And that judgment is about every single one of the individual particulars, or of the individuals and species together, if the meaning is a genus.

Next, we ought to learn that when we say "every single one of the such-and-such," this does not mean every single one of what is such-and-such *inasmuch* as it is such-and-such. Like when we say, "every white [thing]," what is meant is not simply every single white thing *inasmuch* as it is white, but just whatever is described as white, and whatever is said to be white, regardless whether that thing is whiteness itself as such, or just something that is described as white but whose true nature is something else, like a human, or a log, that is described as white.

[***subject terms refer to what is actual, but the "actual" may be in the mind***]

Also we ought to learn that the meaning of "every white [thing]" is not everything that is described as *always* being white. For "every white [thing]" is more general than "every [thing that is] always white," and "white" is more general than "white at some time" or "always white." "Every white [thing]," then, means every single thing [21] that is described as being white, whether always or not always, be it a subject for the whiteness by which it is described, or be it whiteness itself. And this attribute is not merely one of possibility or aptitude [to be white]. "Every white [thing]" is definitely not to be understood as everything that is apt to be white, but as everything that is actually described as being white, whether at some time (be this time specified or unspecified), or always, once it is actually so. But this actuality is not only existence in concrete reality, for the subject is sometimes not considered inasmuch as it is existent in concrete reality, like when you say "every sphere comprises twenty triangular

bases," the attribute is not [said] of something that exists [concretely], but of something insofar as it is understood as being actually described by that attribute. The intellect describes it as being so-and-so in its actual existence, regardless of whether the thing exists [concretely] or not. So when you say "every white [thing]," what is meant by this is: every single thing which is described by the intellect as being white—if its existence were made actual—either always, or at some time, whichever it may be. So much for the side of the subject [term].

[T4] Avicenna, *Ishārāt,* 71.3–78.3 [trans. Inati, mod.]

[***the types of compositions that yield assertion***]

This type of composition which we have determined to mention [next] is the one that yields an assertion (*al-tarkīb al-khabarī*). It is that whose utterer is said to be speaking truly or falsely. [...]

[71.9] The types of composition that yield an assertion are three. (a) *First*, that which is called "categorical." In this type, a judgment is made that one idea (*maʿnā*) is predicated of another, or that it is not. Examples of this are "human is animal" and "human [72] is not animal." "Human," and whatever plays the role it does in this sort of example, is called the "subject"; what plays the role of "animal" here is what is called the "predicate." As for "not (*laysa*)," it is a negative particle. The (b) *second* and (c) *third* types are called "hypothetical." A hypothetical proposition is made up of two assertions, each of which has been brought out of its assertive state to another [state]. The two are then joined, not in such a manner that it could be said that one is the other, as in predictive propositions, but either (b) in such a manner that it may be said that one implies the other, or follows from the other—this is called the "connective" or the "assumptive" [hypothetical]—or (c) in such a manner that one is in opposition with and separate from the other—and this is then called the "disjunctive" [hypothetical]. [...]

[***types of affirmation and negation***]

[72.17] A categorical affirmation is for instance "human is animal". The meaning of this is that the thing which [73] we suppose in the mind to be a human, whether it exists concretely or not, we must also suppose to be an animal. And we judge it to be an animal without adding "when" or "in which state," but in accordance with that which is common to the temporal, the restricted, and their opposites. An example of a categorical negation is the statement "human is not stone." The situation here is just like [the affirmation].

The connective affirmation is something like "if the sun is up, then it is day." This is to say that if the first of the two [assertions], i.e., that to which the conditional particle is linked and which is called the antecedent, is assumed to be realized, then the second [assertion], to which the particle introducing the final clause is linked, and which is called the consequent, necessarily follows it or accompanies it without the addition of anything further. The connective negation is that which negates this necessary consequence or accompaniment. An example of this is the statement "it is not the case that if the sun is up, then it is night."

The disjunctive affirmation is exemplified by the statement "either this number is even, or it is odd." It is that which necessitates disjunction and opposition. The disjunctive negation is that which negates the disjunction and opposition, for example: "it is not the case that either this number is even, or it is divisible into two equal parts." [...]

[***metathetic and positive propositions***]

[78.9] Sometimes the composition consists of a negative particle with another [term], as in "Zayd is non-sighted (*ghayr baṣīr*)." By "non-sighted" we intend "blind," or a concept more general than that. In short, if "non-" is put together with "sighted" etc. as one thing, and is then affirmed or denied [of a subject], then "non-" (or in general any negative particle) becomes a part of the predicate. Thus, if you affirm the whole, that would be an affirmation. And if you deny it, that would be a negation, as when you say "Zayd is not non-sighted (*Zayd laysa ghayr baṣīr*)."

One should know that the true account of the categorical proposition is that, together with the idea (*maʿnā*) of the subject and that of the predicate, there is the idea of the composition between the two: this is a third idea in addition to these two. As one should seek to have utterances and ideas correspond in number, this third idea deserves a third utterance signifying it. It may be omitted in some languages, [79] as it occasionally is entirely omitted in Arabic, like when we say "Zayd [is] a writer (*Zayd kātib*)," where it really should be said "Zayd, he [is] a writer (*Zayd huwa kātib*)." But in some languages its omission is not possible, as is the case in proper Persian, for example with "is (*ast*)" in "Zayd is a writer (*Zayd dabīr ast*)." This utterance is called the copula.

If a negative particle precedes the copula, as in "not: Zayd is sighted (*Zayd laysa huwa baṣīr*)," then negation has been applied to the affirmation, thus eliminating it and negating it. Whereas if the copula precedes the negative particle, it

makes it a part of the predicate. Then the proposition is an affirmation, as in "Zayd, he [is] non-sighted (*Zayd huwa ghayr baṣīr*)." Sometimes the negation is doubled, as in "Zayd, he [is] not non-sighted (*Zayd laysa huwa ghayr baṣīr*)." The first [negative particle] precedes the copula for the purpose of negation, and the latter is preceded by the copula which renders it a part of the predicate. A proposition whose predicate is like this is called "metathetic," "altered," and "non-positive" (*maʿdūla wa-mutaghayyira wa-ghayr muḥaṣṣila*). This may also be observed from the side of the subject.

Metathesis either indicates the privation which is opposite to a possessed feature (*malaka*) or some other [lack], such that "non-sighted" just indicates "blind," or "any animal deprived of sight, whether or not it belongs to its nature," or something even more general than that. It is not for the logician to explain this, but for the linguist, and with respect to each language. The logician need only assume that, if the negative particle comes after the copula, or is governed by it in any manner, then the proposition is an affirmation, whether it be true or false; and that [80] the affirmation can apply only to something positive, represented either in [concrete] existence or in supposition (*wahm*). Thus, a judgment can be affirmed of a thing insofar as it is positive (or "real": *thābit*). As for negation, it can also properly be made of a non-positive object, regardless whether it is non-positive necessarily, or not necessarily.

[T5] Bahmanyār, *Taḥṣīl*, 46.7–14

[***need for the copula to express the nexus between subject and predicate***]

You should know that the categorical proposition is completed by three things: the meaning of the subject, the meaning of the predicate, and the nexus between them. If I want to track what is implied in the utterance, it is necessary that [the proposition] contain a signification of the subject, another of the predicate, and yet another of the relation between them. Just from the co-presence of "human" and "animal" in the mind, it need not be the case that one of them is a subject and the other a predicate. When you compose an utterance that signifies the relation between them, then it is a reminder for the mind and [its use] is conventional. There is also [a connecting] expression in what is composed in [the case of] definitions, namely "which," as mentioned above; otherwise it would not be a restrictive compound, and from this would arise no unified compound that yields a definition. For the definition signifies the true nature of a thing, and the true nature of a thing is a unity.

[T6] Bahmanyār, *Taḥṣīl*, 46.15–47.7

[***the properties of the nexus expressed by the copula depend on subject and predicate***]

That which signifies this relation is called a "copula (*rābiṭā*)," and what goes for the [other] auxiliary expressions goes for it too. Like when you say "Zayd, he [is] a writer (*Zayd huwa kātib*)," you could just say "Zayd a writer" (*Zayd kātib*), [implicitly] intending the utterance of the relation between the two. When in the utterance "he" is made explicit, the proposition is called ternary; if it is not made explicit, [47] it is called binary. Moreover, if in addition "it is necessary," "it is possible," or "it is impossible" is mentioned, then [the proposition] is quaternary. It is the copula that makes a unity out of the plurality. As for the categorical proposition, it signifies a single link (*rabṭ*), and the link in the categorical proposition is that you say "the subject is (*huwa*) *the predicate*." The copulae have different properties, depending on the subjects and predicates. Thus, they are simple only if the predicate [holds] of a single subject, not only in name but also in meaning. Not like when you say "the eye (*ʿayn*) is a body," for "eye" is one of the homonymous nouns. If the meaning of an utterance [used to express] a subject or predicate is manifold, then the copula also becomes a homonymous utterance.

[T7] Al-Sāwī, *Baṣāʾir*, 103.16–104.3

[***leaving the copula implicit: verbs and derived nouns***]

The categorical proposition is made complete by three things: the subject, the predicate, and the relation between them. So if you say "human is animal," you establish a relation and a nexus between "man" and "animal" without which it would not be the case that "man" is a subject and "animal" a predicate. There really ought to be an utterance signifying this nexus, but sometimes it is left implicit in the utterance of subject and predicate, relying on the mind's understanding of this relation. If the predicate is a verb or a derived utterance, there is no need to have a separate utterance for the relation, because the verb attaches to the subject all by itself, as it [already] signifies a meaning existing for a subject. Thus, the signification of the subject is contained in the verb. Likewise with the derived noun, as for example "hitter" (*ḍārib*) and "white" (*abyaḍ*) signify whiteness or hitting as belonging to a subject. However, the difference between this and the verb is that, alongside with the meaning it shares with the derived noun, the verb signifies a specified time, a signification which the derived name lacks.

What signifies this relation is called a copula, like "he (*huwa*)" and the hyparctic verbs. A proposition in which the copula is expressed is called ternary, like "Zayd, he is a writer (*Zayd huwa kātib*)" or [104] "[Zayd] exists as a writer (*Zayd yūjad kātiban*)". [A proposition] in which no such utterance is expressed is called binary. A ternary proposition is negated only if a negational particle is [applied] to the copula, so as to deny and negate it, like when you say "Zayd is not a writer" (*Zayd laysa huwa kātiban*); and then it is called a simple negation.

[T8] Al-Sāwī, *Baṣā'ir*, 105.11–106.6

[*different types of negation*]

People have tried to distinguish between the metathetic affirmation and the simple negation by making the metathetic [proposition] a non-existence [proposition]. The non-existence [proposition] is for them [a proposition] whose predicate is the lesser of two contraries, regardless of whether it is privative, like blindness or darkness, or an opposite like injustice. [...]

[105.16] According to the opinion of most [scholars], the metathetic [affirmation] is, [at least] in the usage of the logicians, more general than the non-existence proposition (*al-ʿadamiyya*). This is because every simple referring meaning either has an opposite or does not. If it does, then either there is an intermediate [meaning between the opposites] or not. When we stipulate an existing subject, either this simple referring meaning exists in it, or its opposite, or their intermediate (if there is one). Or, all these may apply but only potentially, like an unopened eye:[8] unsightedness and sight are both in it potentially. Or, something might not be able to receive [the contraries] either potentially or actually, like the soul, which cannot receive white, black, or an intermediary [color], either potentially or actually. Let us take the meaning of "just" as an example. If we say of an existing subject that it is non-just, then this judgment is true whether it is unjust or intermediate between just and unjust, or if both are present in it potentially like in a young boy, or not either potentially or actually, like in a stone. It is only false if the subject is non-existent, or if it is both existent and just. The non-existence proposition, by contrast, is that whose predicate is the lesser of two contraries. This is like when we say "Zayd is unjust," which will not be true unless injustice [applies to him]; so this is more specific than saying "non-just."

8 Reading *al-ʿayn*.

[106] A second opinion is that the metathetic [proposition] is more general than [the proposition with the negative predicate] for another reason: because we use the metathetic [proposition] for the absence of something that cannot be received by one of the genera to which the subject belongs. For we say "substance is non-existent in a subject," or "substance is a non-accident." A substance has no genus besides the fact that it cannot be an accident.[9]

But the simple negation, which is of the form "not: Zayd is just (*Zayd laysa bi-ʿādil*)," is more general than the metathetic affirmation, because it—I mean the [simple] negation—is true of everything of which the metathetic [proposition] is true. However, when the subject is non-existent the metathetic [proposition] is not true.

[T9] Abū al-Barakāt, *Muʿtabar*, 69.17–70.13

[*knowledge, meaning, judgment, and the declarative phrase*]

First of all we need to know what cases of understanding (*maʿārif*) are, and what cases of knowledge (*ʿulūm*) are, and what is the difference between the two. Cases of knowledge are made up of [70] composed utterances and meanings (*maʿānī*). Declarative phrases are utterances signifying [meanings], just insofar as they are cases of knowledge, not insofar as they are meanings [that are] more than one. Truth and falsity are concomitant to them by their relation to existence, by correspondence or lack thereof, respectively. Taking something as true or false is a judgment (*ḥukm*) of this correspondence or lack thereof. The judgment is a state (*ḥāla*) occurring in the soul: this is knowledge. Or rather, knowledge is the outcome of the judgment (*maḥṣūl al-ḥukm*) and that which is judged, upon which the judgment is passed in the soul. This is why "objects of knowledge" is said in two ways. The first is called "knowledge" [in the strict sense], and this is the judgement of a proposition, either affirming or denying [it]; the second is of existing things which have those meanings, and these in particular are customarily called "objects of knowledge." However some objects of knowledge are things whose meanings are not judged as applying to existent things. Such are, for example, the genera and species mentioned earlier. These only occur by relation to existing things, which is why the existent is not necessarily prior to the object of knowledge and knower in every case; rather, there

9 The point here is that substance has no genus and so can only be "defined" or picked out with negative characterizations.

are some objects of knowledge (I mean, cases of knowledge) that are prior to existents, and are their causes. This point of view is easily verified by the expression "existence." Propositions are also declarative phrases, so called insofar as they are signs of one thing being asserted about another.

[T10] Abū al-Barakāt, *Muʿtabar*, vol. 1, 70.18–71.11

[***affirmation is more fundamental than negation***]

Concerning predication: an affirmation is called "predication" in the true sense (*bi-l-ḥaqīqa*), whereas the negation is so called only metaphorically, insofar as formulating (*taqdīr*) a predication is prior to getting knowledge of its negation. It is not that each of two meanings comes to mind, and then it follows for the mind that one is affirmed or negated of the other; rather, it is only with specific meanings with regard to [other] specific meanings that the judgment of affirmation or negation follows, either due to the two meanings in themselves, or because this has become necessary for them. Whatever these meanings are, just insofar as they are meanings taken absolutely, they allow for predication even before they are known. If knowledge then brings out this possibility, rendering it necessary, then the judgment regarding it is affirmative. If it brings it out but renders it impossible, then the judgment regarding it is negative. Negation is thus called "predication" because of this prior fact that [the meanings allow for predication]. Thus it is so called [71] metaphorically, whereas affirmation is so called in the true sense.

[***neither subject nor predicate is more fundamental than the other***]

Likewise, "subject" and "predicate" are said of what is postulated as subject and predicate, and as meanings one of which is judged to be the other, and only then do they become subject and predicate in the true sense. The subject is not [initially] determined to be a subject, nor the predicate to be a predicate. Neither of them is prior to the other in this respect, insofar as they are both meanings in the mind, or with regard to any status (*ḥāla*) that attaches to their conception and makes them, by custom, more prior for the mind. Whoever puts the subject first makes it into a subject, and whoever adopts the custom of putting the predicate first makes it a predicate. For there are people who adopt the custom of putting the subject first, on the level of utterances, saying for example "every human is an animal," while others customarily put the predicate first, for example when they say "animal applies to all humans" or "[animal] is said of all humans." But that is perhaps determined by the role (*hayʾa*) played by each and by the causes that attach to them inasmuch as they are what they are, not

inasmuch as they are conceptualized. For in the sciences, it is likewise said that the meanings of substances feature as subjects for the accidents, like "human" for "white." And the particulars feature as subjects for universals, like "human" for "animal" or "Zayd" for "human."

[T11] Abū al-Barakāt, *Muʿtabar*, vol. 1, 71.17–72.7

[***metathetic propositions, the negational particle, and the copula***]

Some categorical [propositions] are said to be "metathetic": these are the ones whose subject or predicate, or both, are a noun that expresses a negation of something, rather than meaning that something is the case. It is signified by a phrase (*naṣṣ*), or likewise a verb (*kalima*), [that expresses] that some meaning is *not* the case. Thus, we say "man is silent," "horses are non-rational," or "man is non-rational." These are opposed to propositions whose predicate and subject are nouns, or nouns and verbs, that positively obtain, and are called simple. Categorical propositions are thus divided into simple and metathetic propositions. The difference between metathetic propositions and [simple] negative propositions is that [in the latter] the predicate is denied of the subject, whereas in the former, [72] that is, the metathetic propositions, the negational particle—which is "not (*lā*)" or "non (*ghayr*)"—is part of the subject or the predicate, and the judgment is affirmative. Or a denial can be joined to [the subject and predicate together] and introduced between them: thus, we say "horses are not non-human,"[10] or "Zayd is not a non-human." This was used in the science of the Greeks. And they had a particle (*ḥarf*) that would be introduced between the subject and the predicate, just like it may be used in Arabic. They called it a nominal suffix (*khālifat al-ism*), which was [like] the particle "he" (*huwa*). So they would say "The horse, it (*huwa*) is non-human" or "Zayd he (*huwa*) is not non-human," which in [the context] of a proposition is called a copula. When the negational particle succeeds the copula, then it is a part of the predicate; if it precedes it, it is a negation of the predicate. With this the difference between negation and metathetic proposition has been completely explained.

10 Emending to *al-faras laysa ghayr insān* instead of *al-faras ghayr insān*; the point seems to be that in contradistinction to the metathetic negational particles *ghayr* and *lā* that always precede the term they are applied to, the predicative negational particle *laysa* occurs, just as it did for the Greeks, between subject and predicate and denies the predicative relation.

[T12] Al-Suhrawardī, *Manṭiq al-Talwīḥāt*, 22.14–23.6

[***concomitants of propositions***]

In a proposition there may be added features (*aḥkām*) that are not required by mere predication, like the utterance *innamā* [23] in Arabic [meaning "nothing but"]. When it is included in a proposition, it signifies the restriction of a part that is brought up in another, negative proposition, in potentiality or in actuality, vis-à-vis another part.[11] Sometimes it implies the restriction of the subject vis-à-vis the predicate, and sometimes vice-versa. Like the [definite article] "*al-*" in the predicate, as in "the human is *the* (*al-*) one who laughs," it signifies the restriction of the predicate vis-à-vis the subject, and their being co-extensional. The negational particle may be included in the proposition to negate what is implied by it,[12] while permitting the remainder of the proposition to be affirmative. Thus it is said "there is no J apart from B," which means sometimes that the two [sc. J and B] are in reality one and the same, sometimes that the one implies the other.

[T13] Al-Suhrawardī, *Manṭiq al-Talwīḥāt*, 25.4–12

[***the copula in Persian and Arabic***]

The true nature of every categorical proposition is that it contains a subject, a predicate, and a nexus. And for each of these, it is only right that there should be an utterance signifying it. Likewise with the hypothetical [propositions]. However, the copulae may be tacit in some languages, or may be flipped around, like in the language of the Persians: "Zayd knowledgeable is" (*Zayd dānā ast*), which in Arabic would be "Zayd, he is knowledgeable" (*Zayd huwa ʿālim*). The utterance signifying the nexus is called the copula. In Arabic this connection can be effected by the utterance "he" (*huwa*), or "being" (*kā'in*), or "exists as" (*yūjad*), like when it is said "Zayd exists as a writer" (*Zayd yūjad kātiban*), or likewise "[Zayd] is being (*kā'in*) [a writer]." When used with this meaning, [the utterance] becomes an auxiliary. Conjoined with it are two concepts [expressed by] nouns or verbs, and they thus function in concert with

11 Contrast *Zayd laysa bi-ṭawīl* ("Zayd is not tall") to *innamā Zayd aṭwal min ʿAmr* ("Zayd is only taller than ʿAmr"). Here *innamā* does not alter the sense of the predication itself, but restricts the meaning of the second proposition: now ʿAmr is the only person in comparison to whom Zayd is taller.

12 Here we read *-hā* rather than the editor's chosen reading, *-humā*, since we take the referent to be "the proposition."

one another. In the language of the Arabs, if the negation precedes the copula, the former negates and cancels the latter, so that the proposition is negative; whereas if it succeeds the copula, then [the negational particle] connects with and becomes part of the predicate, as when we say "Zayd is a non-writer." A proposition with a copula is called ternary, and without it, binary. The difference between a simple negation and a metathetic affirmation is that the first may hold true of non-existing objects, since it is correct to deny attributes of the subject of the negation; whereas the second involves no affirmation of anything existing, except in one of the two [types] of existence [sc. it involves only mental existence, not concrete existence].

[T14] Al-Rāzī, *Manṭiq al-Mulakhkhaṣ*, 123.4–124.9

[*the indefinability of "proposition"*]

On the definition of the proposition: it is said to be that which, when someone utters it, he is said to be speaking either truly or falsely. Alternatively, it is said that it is that which is susceptible to being taken as true or as false. Or else, that it is that in which one meaning is judged to hold of another by means of a nexus, either affirmatively or negatively.

[124] Someone might object to the first [definition] by saying that truth can be defined only as an assertion corresponding to facts (*al-khabar al-muṭābiq*), but then the definition of "assertion" itself will be circular. To the second [definition, an objector might say] that "taking as true" can be defined only in terms of asserting about the speaker that he speaks truly, which again is circular. To the third [definition, an objector might] say that "judgment (*ḥukm*)" is a near synonym for "assertion (*khabar*)"—of which affirmation and negation are but species—so that [here as well] circularity follows.

The truth is that the quiddity of the "assertion" is indefinable, because any reasonable person immediately perceives the difference between the assertion and the fact (*al-amr*). Thus any time someone brings forward the fact as something that may be fittingly [expressed] only as an assertion, this claim is immediately known to be false.

Moreover, ["assertion" is indefinable] because everyone knows by necessity that he either exists or does not, but this is a specific assertion. So knowledge of a *specific assertion* would be prior to having a conception of *assertion* just by itself (*aṣl al-khabar*). Therefore it is primary.

[T15] Al-Rāzī, *Manṭiq al-Mulakhkhaṣ*, 129.2–130.6

[*the form of propositions: the nexus on the semantic level*]

As for the constituent elements (*arkān*) [of the proposition], they are on the one hand its form, namely the nexus (*nisba*) between its two terms, and on the other hand its matter, this being the subject and the predicate. The investigation of the form concerns either its [i.e., the nexus'] meaning, or the utterance signifying it.

And concerning the meaning, there are two investigations. (a) In every proposition there are of course the subject on its own (*dhāt al-mawḍūʿ*), the predicate on its own, and the nexus between the two, which is distinct from them because either of them may be grasped intellectually while being oblivious of [the nexus], and [the nexus] may be grasped while one is oblivious of the specificities of these two [sc. the subject and predicate]. Also, because the nexus between the two things is posterior to them, and what is posterior is distinct from what is prior.

[130] (b) The nexus of one of the two [terms] to the other is not [the same as] the nexus of the other to it, because the nexus [i.e. relation] of one of the two to the other is that of being-a-subject and being-a-locus-of-inherence (*maḥalliyya*), while the nexus of the other to the first is the nexus of being-a-description and of being-that-which-inheres (*ḥāliyya*). One of the two [nexus] may be necessary while the other is contingent, which is why propositions do not preserve their modalities when they are converted. But the nexus which is part of the quiddity of the proposition is the aptitude of the subject on its own for being described by the predicate, while the other [nexus, i.e., that of being a predicate] is only a concomitant [of the proposition].

[T16] Al-Rāzī, *Manṭiq al-Mulakhkhaṣ*, 130.7–132.10

[*the form of propositions: its parts on the level of utterance*]

Concerning the utterance, there are five points of investigation. (a) If the nexus is signified by being included in the predicate term, as is the case with derived nouns and verbs, then on pain of repetition it is not permissible to single it out by correspondence [between simple utterances and simple concepts signified]. Such a proposition is by nature binary on the level of utterances. (b) The natural place for the copula is in the middle between subject and predicate, because the nexus is between these two, so the utterance signifying it also needs to be between them. [131] (c) Every proposition is strictly speaking (*fī*

nafsihā) quaternary, because the copula in itself (*fī nafsihā*) must have a specific modality, being either necessary or non-necessary. Whereas this may or may not be the case for the utterance. (d) When we say "Human: necessary that it is animal (*al-insān wājib an yakūna ḥayawānan*)" (d1) "necessary" may be a predicate, and what comes after it is mentioned so that [the predicate] is further specified, because necessity is a relational matter (*amr nisbī*) and it can be mentioned specifically only by mentioning that to which it is related (*mansūb*); (d2) or ["necessary"] may be part of [the predicate]; (d3) or it may be external to [the predicate]. In the first and second cases, the proposition is not modalized on the level of language, but rather it is absolute. Only on the third account is it is modalized.

But two doubts remain [regarding point (d)]. *First*: if for every predicate, its nexus to its subject may be one of necessity, impossibility or contingency, then, if it is correct to make these three (d1) a predicate, or (d2) part of [a predicate], [the predicate] will then be affirmed of its subject according to one of the three modalities, and an infinite regress will follow. *Second*: If we concede the possibility of making [modalities] either (d1) a predicate, or (d2) a part thereof, or (d3) external to it, by what [criterion] can some of these possibilities be distinguished from others?

[132] *The answer to the first* is that [an infinite regress] only follows if we take these three to be affirmed as established in extramental reality. But this is not the case, as will become clear in the second part of the work (*fī l-ḥikma*).[13] *To the second*: if the copula precedes [the utterance signifying the modalities], then [the modalities] are (d1) the predicates or (d2) part of [the predicates], whereas if it comes after them, then (d3) they are [*de dicto*] modalities. If [the modality] is not mentioned, then it is whatever the intention [of the speaker is].

(e) Even though the quantifier (*sūr*) is (as will soon be explained, God willing) a part of the proposition as heard, it is not a part of the proposition as grasped by the intellect. [The quantifier] is nothing but an utterance signifying the quantity for which the predicate is affirmed, and that quantity is the same as the subject. But in fact the quantifier does not add any further consideration (*laysa li-l-sūr fī l-ḥaqīqa iʿtibār*) distinct from the subject—in contradistinction to

13 The work as a whole is called *al-Mulakhkhaṣ fī-l-manṭiq wa-l-ḥikma*: al-Rāzī thus refers ahead from the logic part to the second section, which includes a discussion of this sort of metaphysical issue.

the copula and the modality. That's why they classified propositions—because of [the additional quantifier]—as quinary, much as they classified them—because of the copula and the modality—into binary, ternary and quaternary.[14]

[T17] Al-Khūnajī, *Kashf al-Asrār*, 77.3–78.2

[*criticism of al-Rāzī: the nexus implied by verbs and derived nouns cannot function as a real copula*]

The Imām [al-Rāzī] maintains in his books that, if the predicate of the proposition is a verb or a derived noun, then [the proposition] may fairly be taken as binary, because of the nexus being [implicitly] signified by being included [in the predicate]. Consequently, it is not permissible—on pain of repetition—to single out [the nexus] by mentioning [the copula]. Whereas if [the predicate] is a non-derived noun, then [the proposition] may fairly be taken as ternary.

This goes against what has come down to us from the Master [Avicenna]. How then can [al-Rāzī] acknowledge in the commentary on the *Ishārāt* that the verb only signifies a nexus to an indeterminate subject? He claims that if we say "Zayd writes," the expression "he" is implied at the end of the verb, being concealed in it, according to the Arabic grammarians; and that if we were also to put it in the middle, we would wind up saying "Zayd, he writes, he" (*Zayd huwa yaktubu huwa*), which is a repetition. But this does not follow. For the expression "he," which is [implied] at the end of the verb, is not a copula according to [the grammarians], but an agent noun (*ism fāʿil*); whereas the middle one is indeed a copula. So the two are not alike. Thus [the grammarians] do not doubt that what is [implied] at the end [of the verb] is a noun (*ism*), whereas some of them maintain that the other is an auxiliary. We find in the Qur'ān the explicit statement of a copula even though the predicate implicitly signifies the nexus, like the words of the Exalted: "You are the All-Observer" (*kunta anta al-raqība*, Qurʾān 5:117), recited with the accusative ending. It would however be acceptable to say that the verb alone is not a predicate, according to them, but rather the whole phrase (*jumla*) made up of [the verb] and the agent noun that comes after it. Even if the verb on its own does not signify a determinate subject, still, together with the concealed pronouns referring back to the preceding [syntactical] subject (*al-mubtadaʾ*), it signifies a determinate subject

14 In other words the proposition, on the level of language, can be considered as having two parts: subject and predicate, or three (adding the copula), or four (adding also the modality), or five (adding also the quantifier).

(*mawḍūʿ*). But generally speaking, the controversy about this is ultimately a linguistic question, one that lies outside the scope of the logician. All the logician has to do is to mention that which signifies a determinate subject. If the Arabic verb does this, on their assumptions, then the copula need not be mentioned along with [the verb]. But if it signifies an indeterminate [subject], then this is needed.

[T18] Al-Abharī, *Tanzīl*, quoted from al-Ṭūsī, *Taʿdīl*, 159.5–160.1

[***unlike verbs and derived names, the copula ties the predicate to a determinate subject***]

If the predicate in a proposition is either a verb or a derived noun, it signifies a nexus to some subject. If the copula is mentioned, it signifies a nexus to a determinate subject. If you say "Zayd writes," the utterance "he (*huwa*)" is implied in the parts of the verb, but it [sc. "he"] would be an agent-noun, whereas the copula signifies the nexus. What is signified by one is not what is signified by the other. [...]

[159.18] When the copula in a proposition is a verb, the proposition is called incomplete ternary, because it does not signify [160] a nexus to a determinate subject; it is only the atemporal copula that signifies that.

[T19] Al-Abharī, *Tanzīl*, quoted from al-Ṭūsī, *Taʿdīl*, 160.14–161.8

[***quantified propositions: mental vs extramental***]

When we say "every J is B" this is sometimes used for extramental existence, sometimes with regard to the true sense (*ḥaqīqa*). In the first case, when one says "every J is B," this means that every J in the extramental world is B in the extramental world, regardless of whether J was like this previously or will be subsequently. In the second case, when one says "every J is B," this means that any thing, were it to exist while being J, would insofar as it exists, be B. That is, everything that has the first feature also has the second feature. This means that everything that implies J also implies B.

[***problems caused by impossible subjects***]

It may also take an impossible [subject], so that it is true to say "whatever is a human and not an animal is a human." For even though this [subject] cannot exist, still it is true of it that if it were to exist, it would be a human and not an

animal; therefore, if it were to exist, it would be a human. On this interpretation, the universal negation is not true at all, because if you say "no human is a stone," its contradictory would wind up being true, because whatever is a human and a stone, is a human, and whatever is a human and a stone, is a stone. [161] Therefore, some humans are stones. From this it becomes clear that the particular affirmation [e.g. "This human [that is not a stone] is a stone"] is never true either. Also, the universal necessary proposition would be true together with the truth of the metathetic with the opposite predicate. For if you say "every human is an animal" it would be true together with it that some humans are *not* animals, because whatever is a human and not an animal is also a human, and everything that is a human and not an animal is also not an animal—therefore, some humans are not animals. Since this is so, we have restricted the subject so that it is not something impossible. Then, when we say "every J is B" in the true sense (*bi-ḥasabi l-ḥaqiqa*), we will mean that everything that implies J—from among the instances that are not impossible either by themselves or on account of something else—also implies B. Sometimes we may also use ["every J is B"] with regard to mental existence. In that case what is meant by it is that everything that is J in the mind is also B in the mind.

[T20] Al-Abharī, *Tanzīl*, quoted from al-Ṭūsī, *Taʿdīl*, 166.4–7; 167.20–23

[***problem of impossible subjects***]

When it is said "everything that is not J in the extramental world is B in the extramental world," not in the sense that every non-J in the extramental world is B in the extramental world, but in the sense that everything of which the negation of J is true in the extramental world is B in the extramental world, this being the negation of the subject—this is never true, because the negation of J would be true of an impossible thing in the extramental world, and it is not true of [the impossible thing] that it is B in the extramental world. [...]

[***"every J is non-B" converts to "no J is B"***]

[167.20] But when it is said "Every J is not B in the extramental world," not in the sense that every J in the extramental world is non-B in the extramental world, but in the sense that the negation holds true of the individual instances of J, then [in this case] the negation is made [a part of] the predicate, so that it is a negation of the predicate and there is no affirmative judgment being made. Its denial presupposes the existence of the subject and is equivalent with [the proposition] "No J is B."

[T21] Al-Ṭūsī, *Taʿdīl*, 159.9–160.11

[***commentary on T18: verbs do signify the nexus to a determinate subject, but only accidentally***]

I say: the verb, when it is the predicate, signifies the nexus to some subject when it is taken in isolation. This is what happens when we say for example "Zayd writes (*yaktubu Zayd*)." Here, the utterance "writes" signifies in its essence the nexus to some subject, which is then specified by the utterance "Zayd." As for what happens when we say for example "Writes Zayd" [here the Arabic word order is the grammatically improper *Zayd yaktubu*], there is no difference in meaning between this and our saying "Zayd [is a] human," since both are connected by the [hidden] pronoun "he" on the level of meaning, so that what is implied is "Zayd: he writes." They differ only in that "writes" needs "he" yet another time, whereas "human" does not, and this is the "he" implied in the verb which is the agent pronoun—which is different from the copula, for it is a noun while the other is a particle.[15] The grammarians call one the partitive and supporting copula, and the other a nominative pronoun. Hence, the derived noun is analogous to the verb. When we say for example "[Is] Zayd a writer (*a-kātib Zayd*)?" [the word order in Arabic is "A writer Zayd?" with an interrogative particle prefixed to "writer"] it connects by itself, whereas when we say "Zayd [he is a] writer (*Zayd kātib*)" it connects by means of the implied utterance "he". [...]

[160.2] In terms of meaning, the verb does not signify the nexus to a determinate subject essentially. Nonetheless it signifies it accidentally, because its agent specifies that subject which the verb did not signify as specified, as when we say "Zayd, [he] is a writer (*Zayd yakūnu kātiban*)." Here the utterance "[he] is (*yakūnu*)" signifies the necessity of its being connected to some subject, and the utterance "he" that is implied in it and that refers back to Zayd specifies the subject to which it is connected. This proposition, on the level of meaning, signifies the same as that which is signified by "Zayd, he [is a] writer (*Zayd huwa kātib*)," together with the addition of its signification of time because of the utterance "is" that is added to it.

Now, as far as the utterance is concerned, (a) the proposition whose [copula] is in the form (*ṣigha*) of the verb is called incomplete ternary, while (b) that

15 Again, we have here the double function of *huwa*, as pronoun and copula. See the previous note.

whose [copula] is in the form of a noun is called complete ternary. (c) And that in which there is no copula mentioned is called binary. For the utterance alone, without considering hidden pronouns and implied [meanings], requires in (a) one of the [first] two cases the nexus to an indeterminate subject, and (b) in the other the nexus to a determinate subject, while (c) in the third case, it does not signify a subject.

[T22] Al-Ṭūsī, *Taʿdīl*, 161.9–162.1

[***commentary on T19: criticism of al-Abharī's account of reference in the extramental sense; existence is not an attribute, and reference is only to the quiddity***]

I say: with each of the three approaches that [Abharī] mentions there is room for discussion and further inquiry.

The first [*reading*], which has to do with extramental existence, was that "every J is B" means that each of the Js existing in the extramental world at the present time, or in the past or future, is also B in the extramental world. This is the approach ascribed to some of the ancients. The Master [Avicenna] discussed this and described it as nonsense and confusion. *He said*: when we say "every B [is J]," and mean by ["every B"] each item which is described as B at some time, this [only refers to] some of what is described as B, but "every B" is more general than that. *He said*: in this case the subject-terms of the propositions are items taken without consideration of their existence, yet predicates are predicated of them without being either necessary or contingent, but just predicated of them insofar as they apply at some [specific point in] time. For example, when [the mathematicians] say "every pair of transverse circles constantly moving in different directions along a single axis towards its poles [first] coincide and are [then] disjoined," this proposition is not necessary, for coinciding and being disjoined is not always [predicated] of them. And likewise with the contingent things which [in themselves] may be or not, yet must actually occur at a certain time. *Then he said*: even so, we do not mean that in which it exists, at some certain time period; rather one does not even consider its existence but only its quiddity. Thus the words of the Master. Now, if D is the subject one may want to assume it to be extramentally existent (which is not our view). But in that case, existence would be an attribute of the subject and a part of it. But what we understand by "every D" [is broader,] taking D absolutely.

[T23] Al-Ṭūsī, *Taʿdīl*, 162.2–163.14

[***commentary on T19: criticism of al-Abharī's account of reference in the "true sense"***]

Concerning the second [*reading*], which [al-Abharī] linked to the "true sense (*al-ḥaqīqa*)": here he offered an interpretation thanks to which he fell into error. *He said*: what is meant by our saying "every J is B" is that everything that implies J also implies B. But their [i.e., the other logicians'] interpretation is confused.[16] That is, the thing need not be said of that which is implied. Here, the meaning of "every J" is everything that is said to be J, not everything that, were it to exist, J would exist. For there are many things such that, were they to exist, J would exist, yet are not said to be J: for instance the complete causes of J, the things of which J is one of the parts, and the things from which J cannot be separated in existence.

The reason [al-Abharī] fell [into this error] was that some people explained the meaning as follows: when we say "every J," we do not only mean by it everything that is J in the extramental world, but also everything of which, *were it to exist*, it would be true to say of it that it is J. By bringing up the hypothetical here, they didn't mean that there is an implication between the existence of those things and their being described by J-ness. Rather, they wanted to include under "every J" whatever is actually J for the intellect, or by mental supposition, from among those items that are not excluded from being J. For in order to understand the meanings of conditional particles, one first needs to suppose the antecedent to be existent.

[***the problem of impossible subjects***]

Now, since the author of the book [i.e. al-Abharī] mistakenly thought there to be an implication, he used a hypothetical connective proposition [i.e.: "if J exists, it is true to say of it that it is J"] to explain how the [reference of the subject-term] is restricted in categorical propositions. Hence he linked universality in predication, by which I mean the extension of all instances ["all J"], to universality in conditionals, by which I mean the general validity [of the conditional "always: if J exists, then it is true to say of it that it is J"]. From this it follows that [al-Abharī had to accept] impossible objects, because there is no problem with the antecedent of a conditional being impossible.[17]

16 Reading *mubham*, as suggested by an anonymous reviewer.

17 We take the point to be as follows: al-Ṭūsī thinks that al-Abharī confuses (a) "all J, if it

Hence [his] judgment that the subject-term of the whole [proposition] could include impossible objects. Thus when one says "every human," this would include that which is human and not-animal. But no one would adopt this position! For the later scholars disagreed with the Master Abū Naṣr al-Fārābī, despite his preeminent position in the verification of the philosophical sciences, for which he was nicknamed the "Second Teacher". *He said*: when we say "every J," this includes anything that could be J, such that one must understand by "black" everything that is not black but might possibly turn black. [Having denied this,] how then could [the later scholars] allow it to include even things that cannot possibly be black?

Proof that his [*al-Abharī's*] *claim is false*, namely that it is true that every human that is a non-animal is a human, even though this cannot exist. This is justified [by al-Abharī] on the grounds that even though the subject cannot exist, it is still true of it that, if it were to exist, human would be a non-animal, and were it to exist, it would still be a human. This is based on the necessity of implication from the whole [163] to its part. Hence he was led to the view he adopted. On this basis, he judged that some clear syllogisms that include a true conditional are not productive, because he allows that the truth of the [whole conditional] proposition [i.e.: "if J exists, then it is true to say of it that it is J"] remains intact, regardless of the assumption made in the antecedent, and thus it is allowed that this [assumption] be something absurd. *It may then be said to him*: the antecedent in "if something that is human and not an animal were to exist," is absurd, just as you stated. In which case, there will be a disparity in truth between the whole [conditional] and one part of it. In light of this, it will not follow that "human" is predicated of "human that is a non-animal."

What he [al-Abharī] says in the insight following this one has not escaped the author[18] [al-Ṭūsī himself]: "if the consequent is a part of the antecedent, the proposition will be true by tautology (*jazm*); but this does not happen with other inferences, as I will show." But this is an arbitrary ruling and fails to acknowledge any special difference between [the hypothetical conditional] and the other inferences.

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exists, is J" with (b) "always: if J exists, it is J." Construal (a) need not allow impossible subject terms, because "all J" will be an empty set if J is impossible; by contrast (b) would need to allow them, because when J is impossible, "if J exists" will simply be a false antecedent of a conditional.

18 Reading *al-muṣannif*.

Verification regarding this proposition [sc. "every human that is a non-animal is a human"]: "human"—which is [here] made a predicate—cannot be taken in the sense of being possible of existence. "Human" in this sense is something that must necessarily be a rational animal, so it is impossible that it be non-human or non-rational. The subject [of the proposition], which is "human that is a non-animal," means something that is a rational animal but not an animal. How though can "non-animal" be predicated of animal, which cannot possibly fail to be animal? In fact it [would then] be possible to predicate of it "human that is non-human." Thus, it is obvious that what [al-Abharī] proposes, namely that the proposition is true, is not as he claims.

[T24] Al-Ṭūsī, *Taʿdīl*, 164.12–164.19

[***commentary on T19: on the mental reading, "every human" would again include reference to impossibilities***]

Concerning the third [*reading*] *that he brings forth*, namely the one according to which ["Every J"] is used only with respect to mental existence, this is [a position] that no one could possibly defend, because there are many absurd [thoughts] existing in the mind. When one focuses on mental existence and disregards extramental existence, it becomes possible[19] to make use of a judgment like "Humans are flying," because it may be imagined to be so in the mind. Then, when one says "every human," this would include the flying humans, and the aforementioned absurdities would arise again. There is no use in considering such examples, since they are determined to be impossible by themselves in the extramental world. […] Thus the extramental existent has to be included in [the referent of the subject term], since after all this will never fail to exist in the mind.

[T25] Al-Ṭūsī, *Taʿdīl*, 164.20–165.9

[***commentary on T19: the majority reject impossible subjects***]

Having shown the faultiness of the approaches he mentioned, let us explain the widely acknowledged approach used by the majority (*jumhūr*) of scholars. It is this: when we say "Every J is B," we mean by it that every single instance of what is said to be J—regardless whether J-ness is its essence or a non-essential

19 We delete the negation here.

attribute ascribed to it along with its essence; and regardless whether the attribute holds always or not, or instead at a specific time or not; and regardless of whether it is existent extramentally or [165] in the intellect, or merely as a mental stipulation of something whose existence is not impossible by itself, but just on the condition that it is how it would exist if it were indeed to exist, without considering any of these types [of existence, i.e. extramental, mental, or stipulative], and rather just insofar as it is actually J according to a more general manner of existence that includes all sorts of existence, and not in that it exists, insofar as it is existent or not existent, and also not merely in that it is truly said to be J—is B. And it has the existence of B-ness in just the way it has the existence of J-ness. Now, if the proposition is a general absolute, according to the foregoing explanation impossible objects will not be included in it. Nor will anything that is [merely] in potentiality, insofar as it is in potentiality. If the subject is impossible by itself, like void or the atom, then one is to understand from [the proposition] that on the opinion of the speaker it is not impossible. Upon the attribution of extramental existence, void or the atom would be in actuality, and it is in this sense that he is making his judgment. This then is the reading espoused by the majority.

[T26] Al-Ṭūsī, *Taʿdīl*, 165.10–166.1

[*commentary on T19: on al-Fārābī's account*]

It remains for us to consider the reading ascribed to the eminent sage Abū Naṣr [al-Fārābī]. *We say*: the difference between the first reading and this one is the difference between (a) the general absolute [proposition] and (b) the general possible [proposition].[20] For (a) the first is as if it contained everything that is J in the "general absolute" sense, while (b) the second is as if it contained everything that is J in the "general possible" sense,[21] which excludes that which in itself cannot possibly be J, but includes that which may be J but never actually becomes J, whether extramentally or by stipulation.

(b) Thus, when we say "everything that is actually J is necessarily or possibly B," this must also include everything that *can be* said to be J, even though there is no expression of this in the whole of the subject-term. For if we stipulate

20 For the different types of modality propositions and their respective truth conditions, see our chapter on Modal Syllogistic.

21 Compare to our notion of "one-sided possibility," i.e. either necessary or contingent, but not impossible.

that something that can be said to be J becomes J in actuality, then it is certainly included in the mentioned judgment. The knowledge that this judgment obtains in the bare facts (*fī nafs al-amr*) is prior to the stipulation, because a possible stipulation should not introduce something non-necessary for what is necessary, or vice-versa. For that would be an absurdity, and the possible never requires anything absurd. (It might, though, signify something that [the speaker] does not know [to be impossible].) The stipulation is restricted to taking something not impossible insofar it is in actuality, not in potentiality or in some other way.

(a) But when we say "everything that is J in fact, is B absolutely," this does not include that which *can be* said to be J, because this latter judgment just permits that [the subject] is compatible with J-ness in the bare facts, but which has not actually become J in actuality, even if it is among those things that can be J.

This is the difference in perspective between the two readings, and with regard to generality [166] and specificity. We went on at some length on this topic because it is important in this science [sc. logic].

[T27] Al-Ṭūsī, *Taʿdīl*, 166.8–168.7

[***commentary on T19: criticism of al-Abharī's account of metathetic propositions***]

I say: sometimes [al-Abharī] takes a hypothetical proposition in place of a categorical [proposition], and sometimes he takes a categorical proposition. In this case he takes the categorical proposition. He considers here the difference between categorical propositions with negation and with metathesis, in which [the negation] is attached to a predicate that is either affirmed or denied. The truth is that when the subject just by itself has a negation or a metathesis ascribed to it, and nothing further, there is no difference between the two. But a difference does arise in the scenario where [the subject] is restricted to extramental reality.

Before proving this, let us settle what needs to be known about this issue. *We say then*: when the subject in a proposition is taken as extramentally existent, one may pass judgment concerning it, whether affirmatively or negatively, in both the extramental world and the intellect. But when it is taken as not being extramentally existent, one may make no affirmative judgment about it extramentally, because one cannot ascribe an existing attribute to that which is not

extramentally existent. But one may still make an affirmative judgment about it intellectually, as when the conjunction of two contradictories is conceived [in the mind] and judged to be absurd. As for negation, there is no disputing that it can be done, even if it is taken absolutely, and [the subject's] existence and non-existence need not be considered, according to the generally accepted view we have mentioned. So the judgment concerning it is correct in all cases, except if it is judged as having some positive feature (*amr thubūtī*) extramentally, which would require judging it to exist extramentally, as we mentioned. But this will not be necessary, so long as what is judged to hold of it is extramentally negative (*amr salbī*); instead, it remains at the aforementioned absolute level.

Now that this is settled, it becomes clear that when we say, "Everything of which the negation of J is true in the extramental world" [this being a negation] and [167] "Everything of which the affirmation of non-J is true in the extramental world" [this being a metathesis]—without this meaning that everything that extramentally exists, and of which this negation or affirmation are true, are *absolute* subjects that have been posited together with the two attributes [sc. J or non-J]—a negational utterance is made part of one of [the two propositions, i.e. the negation], while an affirmative utterance is made part of the other [i.e. the metathesis]. So the situation of these two subjects together with these two attributes is like that of "[not a] writer" [which is a negation] and "illiterate," [which is a metathesis], etc. So with respect to this particularity, they are equivalent.

As for the scenario where the two attributes are restricted as being in the extramental world: the thing described by an extramental affirmation must [likewise] be extramentally existent; whereas the thing described by an extramental negation remains absolute, just as it had been previously. And then, when we judge the [two attributes] by saying "It is B in the extramental world," this requires them to be existent in the extramental world. This does not require that one judgment be untrue while the other is true, whether on the level of expressions on the level of meaning. [...]

[167.16] The upshot is that the difference between the two propositions mentioned is that, with the metathetic one, sometimes the description of the subject signifies its being existent extramentally, but sometimes the judgment concerning it is otherwise. Whereas with the negating [proposition], the description of the subject signifies neither its existence nor its non-existence; it is only a [positive] predication that requires it to be existent extramentally. [...]

[168.1] If the negation comes after the copula, then it has the sense of a metathesis, regardless of whether the utterance "not" (*laysa*) is put into composition with another [utterance], or instead the utterance "un-" (*lā*) is put into composition with another utterance, because all these composites and compounds play the role of simple terms, about which a judgment is passed. In a [metathetic] proposition one cannot ascribe a predicate to a simple [in the same way as we say] "this is that" (*huwa huwa*). So the meaning [of metathetic propositions] is: each thing said to be J in the way [just] ascertained is that thing of which B or not-B is predicated, or whatever other expression you want. If the predicate is not applied in the sense of a negation, such that one thing is negated of another, then the predicate alone may become a proposition and it no longer counts as a predicate. As for whether the subject demands existence or non-existence, this is as has been ascertained.

[T28] Al-Kātibī, *Munaṣṣaṣ*, fol. 51^{r}29–51^{v}8

[***commentary on T14: criticism of al-Rāzī's remarks on the indefinability of "proposition"***]

Someone may respond to the first [*argument*] by refusing to concede that circularity follows. That would be the case only if we knew the true nature of "assertion" (*khabar*) by [means of knowing] the true nature of "speaking truly" (*ṣādiq*) and "speaking falsely" (*kādhib*), but this is not so. For we define "assertion" as a statement to whose speaker one of these utterances, I mean "speaking truly" or "speaking falsely," is applied. Nothing in this prevents that one might know the expression ["assertion"] while not knowing its two names. The upshot is that we do know the true nature of an assertion by these two utterances, and we know, regarding the true natures of that for which these utterances have been instituted, that they are some kind of assertion. There is no circularity in that. This is the response to [al-Rāzī] when he says that "taking as true" is asserting about the speaker that he speaks truthfully, and "taking as false" asserting about him that he speaks falsely, and that this would be circular.

[***concession: one cannot define the essence of "assertion" without circularity***]

As for his argument that "judgment" (*ḥukm*) is a synonym for "assertion," and that the definition of "assertion" in terms of ["judgment"] is a definition of something in terms of itself, we do not concede that circularity follows. It would only follow if the aforementioned definition of "assertion" were a definition at the level of the true nature, and this is indeed impossible. Instead, it is a definition in terms at the level of naming, which comes down to the substitution

of an utterance with another one that is clearer for the questioner. In this way, nothing prevents defining something by a synonymous utterance that is clearer to the questioner than the utterance about which the question was posed. This response applies to the other two doubts as well.

[T29] Al-Kātibī, *Munaṣṣaṣ*, fol. 52^{v}15–25

[***commentary on T15: presentation of al-Rāzī's arguments for the distinctness of the nexus from both subject and predicate***]

Every proposition inevitably consists of the subject on its own, the predicate on its own, and the nexus as an affirmation between the two, if it is affirmative, or as a negation, if it is negative. This nexus is [according to al-Rāzī] distinct from the subject and predicate; he argues for this in two ways.

First: if [the concept of the nexus] were the same as either [the subject or the predicate], then we could not grasp either one of them [without the nexus]. But that consequent is false in both cases [sc. it is false that one cannot grasp the subject, or the predicate, without grasping the nexus]. The conditional is evident in both cases. As for the falsity of the consequent in both cases, this is because everyone can grasp a subject or a predicate while ignoring the nexus between them, and vice versa. (This calls for further inquiry, though, since we would rule out the possibility of grasping the nexus between them [sc. without grasping the subject and predicate].)

Second: the nexus between [the subject and predicate] is posterior to both. For a nexus (*nisba*) between any two things is posterior to them, and what is posterior to something is necessarily distinct from it. The first premise [i.e. that the nexus is posterior to subject and predicate] needs further inquiry, because the aggregate of all relations (*nisba*) has a relation to each one of them, even though that relation [sc. each member of the aggregate] is prior to the whole made up of all relations, by being a part of it.[22] And what is prior to something cannot possibly be posterior to it. Now that you have learned that, *we say*: as for the fact that every proposition inevitably needs to have a subject and a predicate, this is obvious. As for the nexus, it does enter into the quiddity of [the proposition], for if it did not, then anyone who conceived the meaning of the

22 Here we switch our translation of *nisba* from "nexus" to "relation" to help make the point clear.

subject and the meaning of the predicate without this nexus, would then conceive the meaning of the [relevant] categorical proposition; but clearly this is not so.

[T30] Al-Kātibī, *Munaṣṣaṣ*, fol. 52^{v}25–53^{r}17

[***commentary on T15: rebuttal of al-Rāzī's arguments that the nexus of subject to predicate is not the same as vice-versa***]

He [*al-Rāzī*] *said:* "the nexus of one of the two [terms] to the other is not the [same as] the nexus of the other to it, etc."

I say: This is the second of the two inquiries about the meaning of "proposition," which lays it down that the nexus of the subject to its predicate in a proposition is not the nexus of the predicate to its subject. [Al-Rāzī] argued for this in two ways.

First: the nexus of the subject to the predicate is the nexus of that which is described to the description, and the nexus of the locus of inherence (*maḥall*) to that which inheres (*ḥāl*). Here he arranges four syllogisms of the second figure, each of which produces the conclusion that one of the two nexus is distinct from the other. (a) We say that it is the nexus of the subject to the predicate, and not the nexus of the predicate to the subject, that is the nexus of that which is described to the description.[23] (b) Likewise, we say the nexus of the subject to the predicate is the nexus of the locus of inherence to that which inheres, whereas the nexus of the predicate to the subject is not like that. (c) We say the nexus of the predicate to the subject is the nexus of the description to the thing described, but the nexus of the subject to the predicate is not like that. (d) We say the nexus of the predicate to the subject is the nexus of what inheres in a locus to that locus, but the nexus of the subject to the predicate is not like that.

But this calls for further inquiry. For we don't concede the truth of something in the premises mentioned in these syllogisms: if we say "X is Y," we don't [necessarily] mean that X is that which is described and Y a description, nor that X is a locus of inherence and Y that which inheres in it—even if in *some* kinds of propositions X may be something described or a locus, and Y a description or

23 All four arguments claim simply that the nexus is asymmetrical so it cannot be the same in both directions; arguments (c) and (d) are the same as (a) and (b) but go from predicate to subject instead of vice-versa.

something that inheres. Rather, what we mean by ["X is Y"] is that for everything of which X is true, Y is [also] true of it. This being so, the argument he gave to show that the two mentioned nexus are distinct crumbles.

He said: and one of the [nexus] may be necessary and the other contingent. [...]

I say: this is the *second* way he tries to show the distinction between the two mentioned nexus. He lays it down that, if in a proposition the nexus of the subject to the predicate were the same as the nexus of the predicate to the subject, then the two could not differ in modality. But the consequent is false. The antecedent needs no explanation. As to the falsity of the consequent: this is because one of them may well be necessary and the other contingent. The nexus of the predicate to the subject in the proposition "every writer is a human" is necessary, whereas the nexus of the subject to the predicate is contingent [sc. because it is impossible to be a writer without being a human, but possible to be a human without being a writer].

Someone might say: we do not concede that the nexus of "writer" to "human" in "Every writer is a human" is contingent; rather, this is instead the case with "every human is a writer."

Fine, but what you have mentioned only follows if the nexus of "writer" to "human" in the proposition "every human is a writer" is not [the same as] the nexus to it in the proposition "every writer is a human." This, however, is rejected.[24]

[Al-Rāzī's] words "Hence, propositions do not retain their modalities when converted" are a pointer to another proof. What he has in mind is that, if the two mentioned nexus were identical, then propositions would retain their modalities when converted. The consequent is false, as you will learn in the chapter on conversion, and hence the antecedent is rejected. It would only be true if the nexus of the predicate to the subject in the original were the same as the nexus to it in the converse, but this is rejected.

24 The point of this bit of dialectic is that an objector says the modal asymmetry is the reverse of what al-Rāzī had argued; al-Kātibī responds by rejecting the modal asymmetry as long as you convert the proposition. (Al-Kātibī himself does still think that the subject predicate relation is asymmetrical: see [T32].)

[T31] Al-Kātibī, *Munaṣṣaṣ*, fol. 53^{r}17–27

[*commentary on T15: criticism of al-Rāzī's idea that only the nexus of the subject to the predicate is part of the quiddity of a proposition*]

Then he said: But the nexus which is part of the quiddity of the proposition is the aptitude of the subject on its own for being described by the predicate, while the other [nexus, i.e., that of being a predicate] is external and concomitant [to the proposition].

But this calls for further inquiry, because this means that the nexus which is a part of the quiddity of the proposition is the nexus of the subject to the predicate; as for the nexus of the predicate to the subject, it would be external and concomitant to the quiddity of the proposition. But if anything, it's the other way around. If for example we say "Zayd [is a] writer," then the predicate is related (*yunsabu*) to the subject, not the subject to the predicate. This being so, the nexus (*nisba*) which is part of the proposition is the nexus of the predicate to the subject. The Imām [Rāzī] explained this himself in his commentary to the *Ishārāt*! And how could it be otherwise? For they also say, in the classification of the modalities, that if the nexus of the predicate to the subject is necessary, then the proposition is necessarily true, whereas if [the nexus] is impossible, [the proposition] is not possibly true, while if [the nexus] is neither necessary nor impossible, [the proposition] is contingently true. This will be the case only if the matter is as we have presented it. So we deny that if the nexus of the subject to the predicate is necessary, then the proposition will be necessarily true, because the proposition that is necessarily true is the one whose nexus, which is part of it, is characterized by necessity. What is necessary in the proposition "every writer is a human" is the nexus of the predicate to the subject, which is external to the proposition; that which is a part of it is the nexus of "writer" to "human," and it is contingent. Thus, we reject their argument that if the nexus is neither necessary nor impossible, then the proposition is contingently true. We know this conclusion to hold on the basis of what was concluded when rejecting the first [argument in [T30]].

[T32] Al-Kātibī, *Munaṣṣaṣ*, fol. 53^{r}27–53^{v}5

[*al-Kātibī's own account: the two nexus are distinct, though each is potentially the same as the other*]

In general, this is a topic that stands in need of further inquiry. Look into it yourself and seek the truth about it, and what would offer verification. In my

own view, the nexus of one of the two terms of the proposition to the other as being a subject for it is not the same as the nexus to it as being a predicate for it. If the two nexus were identical, then it would follow that they are also identical in their implications. But the consequent is false, because the nexus of the subject to the predicate as being a subject for it is external to the quiddity of both the basic proposition and its converse. Whereas its nexus to it as being a predicate is internal to the quiddity of the converse, and the nexus of the predicate to the subject as being a predicate for it is internal to the quiddity of the original proposition and its converse. Also the nexus to it as being a subject for it is external to the quiddity of both the original proposition and its converse. Thus the nexus of one of the terms of a proposition to the other as being a subject for it is not the nexus of the other to it as being a predicate for it. Hence, if these two nexus were identical, then there would be no difference between the subject of a proposition and its predicate inasmuch as they are subject and predicate. The consequent is obviously false. But one of these two nexus is the other *in potentiality*, and [in this respect] there is no difference between the two in either quality or modality. Given for example that "writer" necessarily has "human" affirmed of it, "human" is necessarily affirmed of "writer."

[T33] Al-Urmawī, *Bayān al-ḥaqq*, fol. 13r9–18

[***binary and ternary propositions***]

The categorical [proposition] is made up of three things: the subject, the predicate, and the nexus by which one of them is connected to the other, in the sense that one is the other, or one is not the other (*huwa huwa aw laysa huwa*). If we conceive of both terms without conceiving of the nexus in the sense just mentioned, then there is no conception of the proposition. Concerning this nexus between them, I mean, between each of [the terms], it is only right that it be signified by an expression, and this expression is "copula." If it is omitted in some languages or in certain contexts, then this is just shorthand for what in principle ought to be expressed, and it will be grasped fully in the soul. It is omitted on the level of expression only when it can be expected to be understood in the soul, either from a [particular] language or in certain contexts. In that case the proposition is binary on the level of expression. But it is ternary on the level of thought; but if the [copula] is expressed, then it is called ternary also on the level of expression.

[*the copula in different languages*]

The copula is no doubt one of the auxiliaries, but it may be in the form of the hyparctic verbs mentioned earlier, in which case it is called a "temporal copula" because of its signification of tense; or, it may be in the form of a noun (*ism*), like any of the pronouns. Then the copula is—in the Arabic language—a partitive or adjuvative copula which [in logic] is called a "non-temporal copula." Languages differ with regard to the use of the copula. In Greek it is necessary to mention a temporal copula in all propositions, be they categorical or hypothetical. In Arabic this is only necessary in conditionals like "If the sun is up, it is day (*in kāna al-shams ṭāliʿ kāna al-nahār*)." It is not necessary in categoricals like "Zayd [is] at home (*Zayd fī l-dār*)," so the proposition is binary. When we say "Zayd was (*kāna*) free," then [the proposition] is ternary, and the copula is temporal; when we say "Zayd, he [is] (*huwa*) free," then the copula is atemporal. In Persian, it is necessary that any proposition be ternary. The copula is either temporal as in "Zayd was (*būd*) a writer" and "Zayd will be a writer," or atemporal, in which case it may be an expression as in "Zayd is [*hast*] a writer," or a vocalization at the end of the predicate as in "Zayd a writer [is]" [*Zayd dabīr-e*].[25]

[T34] Al-Urmawī, *Bayān al-ḥaqq*, fol. 13^{r}18–13^{v}2

[*Avicenna's view on when the copula must be made explicit*]

The Master [Avicenna] said in the *Shifāʾ* that when the predicate is a verb or a derived noun, it is not unlikely that it connects by itself to the subject, as it contains a nexus to the subject. Hence, the need of verbs and derived nouns for a copula is not [the same as] the need of non-derived nouns [for it]. Then he said that the verb and the derived noun do indeed signify a nexus to a subject, but they do not signify a nexus to a *determinate* subject. All that is needed is something that connects the predicate to a subject: the temporal copulae in Arabic do not signify a nexus to a determinate subject, only non-temporal copulae do that. Since the latter do signify a determinate subject, [Avicenna] distinguished three classes of propositions. *First*, complete ternary, in which a nexus to a determinate subject is signified, like the propositions in which there is a non-temporal copula. *Second*: incomplete ternary, in which an indeterminate subject is signified, like when the predicate contains a verb or derived noun

25 Medieval Persian used a final *kasra* for what became the colloquial ending ـه- ("he/she is") in modern Persian.

which includes, as mentioned, a temporal nexus. *Third*: binary. It is on this basis that we are to understand his remark in the *Ishārāt*, where he said that when we say "Zayd [is] a writer (*Zayd kātib*)" one [really] ought to say "Zayd, he [is] a writer (*Zayd huwa kātib*)," so as to specify the nexus. He had explained that the nexus needs to be specified; but the need of verbs and derived nouns [for a copula] is not the [same as] the need of non-derived nouns, for there is nothing in the [latter] that signifies a nexus. The Imām [al-Rāzī] falsely assumed that this was different from what [Avicenna] said in *al-Ḥikma al-mashriqiyya*, [namely] that the verb implicitly signifies the nexus to the subject. But I have ascertained that the two [passages] agree and there is no difference between them.

[***on al-Rāzī's repetition argument***]

The Imām [al-Rāzī] said in his books that if the predicate is a verb or a derived noun, then the proposition is in reality binary, because the nexus is signified implicitly, and it is not permitted—on pain of repetition—to mention it separately. And if [the predicate] is a non-derived noun [says al-Rāzī], then it is in reality ternary. On the basis of what you learned this is a weak argument. In the commentary on the *Ishārāt* [al-Rāzī] acknowledges that the verb only signifies the nexus to an indeterminate subject. Indeed, he said that when we say "Zayd writes," the expression *huwa* ["he," which serves as the copula] is hidden at the end of the verb—"concealed in it" as the Arabic grammarians say. So if we were to also place it in the middle, then we would have to say "Zayd, he writes, he (*Zayd huwa kātib huwa*)." And because of this particle, the Imām believed that a repetition would follow.

I say: repetition will result only if both expressions, the *huwa* in the middle and *huwa* at the end, are copulae; but this is not so, according to the Arabic grammarians. Rather, the one at the end is an agent-noun, while the one in the middle is a copula. There is no disagreement that the one at the end is a noun, but they do differ with regard to the one in the middle, as some [grammarians] say it is a noun, others that it is an auxiliary. There appears in the glorious Qur'ān a mention of the copula together with a predicate containing the nexus. This is in the words of the Exalted: "when you took me up, you were the observer (*kunta anta al-raqība*) over them" (5:117). Since ["observer"] is put in the accusative, the analysis given to this by the grammarians is that the verb alone is not a predicate. Rather, the verb and an agent-noun in the accusative imply this together, even if this does not signify a determinate subject on its own.

But this is a linguistic question. For the logician, it is only necessary to mention whatever signifies a determinate subject: if the verb and the derived noun sig-

nify a determinate subject, then it is not necessary to mention the copula, and if not, then it is necessary to indicate it. [13^{v}] The temporal copula may be used for what is not temporal, as in the words of the Exalted: "God is [literally 'was,' *kāna*] compassionate and merciful" (4:96), as well as for what has no specified time, like when we say "Every three is odd" and "Every four is even."

[T35] Al-Urmawī, *Bayān al-ḥaqq*, fol. 13^{v}2–11

[***are there two distinct nexus in a categorical proposition?***]

The nexus of one of the terms to the other as being a subject for it is not [the same as] the nexus to it as being a predicate for it. Otherwise, the proposition would be the same as its own converse. Also, the two [sc. the nexus in the original proposition and its converse] do not imply one another. For they may differ in quality: "every human is an animal," but not "every animal is a human"; and in modality: "every human is *possibly* a writer," but "every writer is *necessarily* a human"; or "nothing that is a moon is eclipsed at daytime," but "nothing eclipsed at daytime is a moon." The difference is [clear] in every proposition that does not convert, and every proposition whose converse is not of the same kind as it. Furthermore, the nexus of one of the two [terms] to the other by subject-hood is not [the same as] the nexus of the other to it by predicate-hood. As for the quality, this [sc. the difference between subject-hood and predicate-hood] is evident, because if A is a subject for B, it is impossible that B not be a predicate for A, no matter whether the subject-hood [of A] is affirmative or negative. As for the modality, it has been said [by al-Kātibī] that when A has B affirmed of it necessarily, and B is affirmed of A necessarily, then it is impossible that the two differ in modality.

But this calls for further investigation. If the subject is more specific than the predicate, like "human" and "animal" for example, then "human" has "animal" affirmed of it necessarily, whereas "animal" is not necessarily affirmed of "human" [sc. because some animals are not humans]. This is with a view to their essences. But with a view to taking something concrete and predicating for it concretely, like "This human is this animal," here it is necessary that both of the two nexus be necessary, or non-necessary; there can be no difference between them.

The Imām [*al-Rāzī*] *said*: the nexus of one of them to the other by subject-hood is not [the same as] the nexus of the other to it by predicate-hood (cf. [T15]). It is because of this that the proposition does not preserve its modality in con-

version. But this is unconvincing. For subject-hood and predicate-hood differ in the converse [of the proposition].

[T36] Al-Ḥillī, *Marāṣid*, 131.8–132.8

[***"proposition" cannot be defined but it can be picked out from other, similar things***]

"Proposition," "assertion" and "declarative sentence" are synonymous expressions, and are known with no need for definition. They have been defined as follows: "they are that whose speaker may be said to speak truly or falsely." Or it might be said: "it is speech allowing for truth and falsehood, deeming true and deeming false."

But these definitions are not free from circularity, for truth and falsity are essential accidents of an assertion, and it is impossible to know either of them without grasping their definition. [132] This may be mitigated by saying that that which needs no definition suffers from some similarity causing it to be confused with something else, which is known to share something in common with it. When one distinguishes it [from this other thing], one arrives at knowledge of it, albeit that this differs from [a proper] definition (*taḥrīf*). Therefore, the goal is not to define (*taḥdīd*) it, but to disentangle (*takhlīṣ*) it from what is like it, [grasping it] specifically. This [distinguishing feature] is the essential accident, which needs no [further] explication: mentioning it for the sake of distinguishing [the undefined item] is primary. So mentioning truth and falsity, so as to distinguish the assertion from other types of composite item, is not absurd.

Let it not be said: some assertions are known to be true, others known to be false, so neither "allows *both* truth and falsehood," so they do not fall under "assertion-hood" [as defined above]. *For we say*: allowing for (*iḥtimāl*) the expression (*iʿtibār*) of [one] form [e.g. falsehood, in the case of a true proposition] is not inconsistent with necessarily having the other mode [e.g. truth].

[T37] Al-Ḥillī, *Marāṣid*, 134.11–137.4

[***the role of the copula and linguistic diversity***]

A proposition is completed by three things: the subject, the predicate and the nexus between them connecting them [by expressing] that the subject is the

predicate, or that it is not it. If we were to conceive the two terms without the nexus, [135] then in that case they would not be made a predicate and a subject. So there is a third meaning distinct from the two terms, and it is only right to signify it by a [separate] utterance, which is called the copula, either in the form of a noun (*ism*), like "he" (*huwa*), or of a verb, like "exists-as" (*yūjadu*). It may be omitted in some languages, and then the proposition is called binary; with [the copula], it is called ternary. Languages differ in this regard: in Greek it is necessary [to use] a temporal copula, whereas in Arabic this is necessary only in connective [propositions], while in Persian the copula is always necessary.

[***binary vs ternary propositions, cf. T17***]

When the predicate is a verb or a derived noun, it has no need for a copula other than itself, though inevitably a copula is involved. The pronoun hidden in it signifies only an indeterminate subject, and a copula would be needed only to determine [the subject]. The proposition will therefore be either a complete, ternary one, that is, one that is connected by a non-temporal copula; or an incomplete ternary one, that is, one connected by a verb; or the predicate in it is a verb or derived noun [so that there is an implied copula]; or [the proposition may be] binary, that is, when the auxiliary is omitted. It has been claimed that verbs do signify a determinate subject, along with the pronoun hidden at their end, which goes back to the preceding grammatical subject. But this is a linguistic controversy.

[***atemporal propositions, cf. T35***]

The temporal copula may be used for something that is not temporal, like when we say "God is [literally 'was,' *kāna*] compassionate and merciful" (4:96), and "every three is (*yakūnu*) odd."

[***not one nexus but two, cf. T32, T35***]

[136] The subject has a nexus of subject-hood to the predicate, and the predicate has a nexus of predicate-hood to the subject, and these two are distinct yet inseparable. If the subject is such that the predicate is affirmed of it necessarily, then the predicate is like this [sc. necessary] in being affirmed of the subject. So it is impossible that the two differ in mode or modality, and each of them is in the potentiality of the other. The nexus of each one of them to its companion is not the [same as] the nexus of its companion to it. Otherwise the initial [proposition] and its converse would amount to one and the same thing, but this is false, because they do not mutually imply or agree with one another. So how could they be the same?

[***modality and the place of the copula***]

The natural place for the copula is between the two terms, because it signifies the nexus between them. You should know that every nexus inevitably has one of the modalities (*kayfiyya*): necessity, contingency, and impossibility. When [the modality] is mentioned, then the natural place for it is to be next to the copula, because it is a quality (*kayfiyya*) of it, just like the quantifier is next to the subject. Even if the quantifier is a part of the proposition on the level of language, it is not a part of the proposition on the level of thought (*maʿqūla*). For it is nothing but an utterance signifying the extension of the individuals of which the predicate is affirmed: that extension is the subject. But in reality this [extension] is not different from the subject. Things are different with the copula and the modality. This is why they did not classify the proposition as being quinary [i.e. as involving not just subject, predicate, copula, and modality, but also quantifier].

CHAPTER 9

The Syllogism

Having considered issues related to individual propositions, we are now ready to turn to the combination of propositions into a syllogism.[1] Here the inevitable starting point is Aristotle's definition of the syllogism in his *Prior Analytics* as "an argument in which, certain things being posited, something other than what was laid down follows by necessity because these things are so" [T1]. In the *Qiyās* of his *Shifāʾ*, that is, the part corresponding to the *Prior Analytics*, Avicenna explains and evaluates this definition nearly word for word. He adds a further qualification, namely that the following of the conclusion from the premises must be necessary and essential, not accidental [T2]. The resulting definition will hold of syllogisms in the mind and those that are actually spoken; for demonstrative science we can deal only with mental syllogisms, whereas in disciplines like rhetoric or poetics the arguments must actually be stated. The terse parallel explanation in his *Ishārāt* adds that a syllogism simply states what follows from premises: it does not require that the premises actually be accepted [T7].

As Avicenna says, the syllogism is the "underpinning (*ʿumda*)" of all argumentation that leads to new knowledge [T6, T8, T20]. Several authors lay out its definition, often delineating its parts: the syllogism is made up of propositions or statements, which are made up of terms plus a copula [T9, T10, T11, T14, T21, T27]. Extending an idea we already saw in our chapter on the Proposition, al-Sāwī extends the "hylomorphic" analysis to the parts of the syllogism, making the propositions its "matter" and the syllogistic figure its "form" [T13]. The definition and whole-part analysis are applicable to the most straightforward case of a "combinatorial (*iqtirānī*)" syllogism, where the statement in the conclusion has not yet appeared in the argument. But they also apply to what Avicenna calls a "reiterative (*istithnāʾī*)" syllogism. As its name implies, the conclusion is a reiteration of something already found in a premise [T7, T15, T20, T27, T37]. This would be the case with some hypothetical syllogisms, as contrasted to categorical syllogisms [T16], because when we argue "If A then B, but A, therefore B," the conclusion B has already appeared as the consequent

1 For medieval reactions to this definition see more generally K. El-Rouayheb, *Relational Syllogisms and the History of Arabic Logic, 900–1900* (Leiden: 2010), 116 ff. and P. Thom, "The Syllogism and Its Transformations," in C. Dutilh Novaes and S. Read (eds), *The Cambridge Companion to Medieval Logic* (Cambridge: 2016), 290–315.

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in the first premise. But as al-Ḥillī stresses [T37], we should not just equate combinatorial syllogisms with categorical syllogisms and reiterative syllogisms with hypothetical syllogisms. This is because, as already noted by Avicenna, a hypothetical syllogism can be combinatorial; we provide an example in a note to [T7]. One other contrast that should be mentioned here is that between a simple and compound syllogism. This is quite straightforward, as a simple syllogism is just one that is not composed of further syllogisms [T30] or more than two premises [T28].

Avicenna stipulates that a syllogism should imply its conclusion "all on its own (*li-dhātihi*)" [T6]. Part of the idea here is that no additional implicit premises should be needed in order to produce the conclusion. A popular example is that from "A is equal to B" and "B is equal to C" it might seem immediately to follow that A is equal to C, but this requires a suppressed premise about the transitiveness of equality. An interesting modification is found in al-Ṭūsī, who in the process of critiquing al-Abharī weakens the demand that the conclusion follows from the syllogism "all on its own." The syllogism is still valid if the needed premise is present *potentially*, in the sense that it follows immediately from a premise that is stated [T29]. There is a further idea captured by "all on its own," namely that the premises should be in the right form so as to produce the conclusion. For instance, we should not need to change the premise to its contraposition to get a valid argument [T21, T28, T32]. Despite his generally following Avicenna's account, al-Sāwī says that if we have this clause in our definition of the syllogism, then we do not need to follow Avicenna in adding that the syllogism yields the conclusion essentially or necessarily, rather than accidentally [T12] cf. [T11]. That would be superfluous.

If we now return to the *Qiyās* of the *Shifāʾ*, we find that Avicenna goes on to raise several doubts about the definition of "syllogism" [T3], which he resolves at [T4] and [T5]. This material is reprised by al-Khūnajī at [T24]. Avicenna's doubts touch on several interesting questions: does Aristotle's canonical definition apply to non-demonstrative arguments? Do trivial, tautologous inferences count as syllogisms? These sorts of worries can already be found in the late ancient logical tradition. For example Alexander of Aphrodisias critiqued the Stoics for giving a place in logic to tautologies like "If A, then A, but A, therefore A."[2] A new set of doubts is found in al-Rāzī [T22], and these become a stand-

2 See T.-S. Lee, *Griechische Tradition der aristotelischen Syllogistik in der Spätantike* (Göttingen: 1984), K. Ierodiakonou, "Aristotle's Logic: an Instrument, Not a Part of Philosophy," in N. Avgelis and F. Peonidis (eds), *Aristotle on Logic, Language and Science* (Thessaloniki: 1997), 33–53, at 36.

ard topic of discussion; Avicenna's doubts are taken together with al-Rāzī's at [T35, T36]. Al-Rāzī's worries have to do not merely with the definition of "syllogism," but with the very idea of implication and inference, and are reminiscent of Lewis Carroll's paradox.[3] His first doubt is effectively that the premises of a syllogism do not yield the conclusion without being combined. To get from "A is B" and "B is C" to "A is C," I need to think about both premises together. But then I must be adding something beyond the individual premises, namely their combination. As in Carroll's paradox, a regress looms, because I will need a second-order combination to put together the premises and the first-order combination. The second doubt transposes the point to epistemology. If I know the two premises, it would seem I should know the conclusion, but if that were so then I would immediately grasp the truth of all implications of all the propositions I know and their combinations. On the other hand, if knowing the premises is not enough for me to know the conclusion, then what do I need to add to get that further knowledge? There is a rich tradition of responding to these doubts, beginning with al-Rāzī himself [T23, T25, T31, T34].

A final issue that arises in this chapter concerns Aristotle's rejection of the fourth figure in syllogistic, which was long ago said to have provoked "perhaps the strangest controversy in the history of logic."[4] The fourth figure is just an indirect version of the first figure:

First figure	*Fourth figure*
A–B	B–A
B–C	C–B
A–C	A–C

Avicenna followed Aristotle in rejecting the fourth figure, and some authors agreed to "discard it" on the grounds that it is "remote from nature" and "troublesome" to establish [T17, T20, T38]. Notice that the complaint here is not that the fourth figure is invalid, just that we can skip it, since the first figure is effectively the same and is much more intuitive. The fourth figure was however

3 For a more detailed discussion, see D. Klinger, "Forms of Carroll's Paradox in Postclassical Arabic Logic," *History and Philosophy of Logic* 44 (2023), 1–16.

4 P. Henle, "On the Fourth Figure of the Syllogism," *Philosophy of Science* 16 (1949), 94–104. For the issue in our period see A.I. Sabra, "A Twelfth-Century Defence of the Fourth-Figure of the Syllogism," *Journal of the Warburg and Courtauld Institutes* 28 (1965), 14–28.

defended early on by Ibn al-Ṣalāḥ [T18] and Majd al-Dīn al-Jīlī [T19], and then more influentially by al-Rāzī and then al-Khūnajī [T26]. This subsequently becomes the more widespread view, e.g. in al-Abharī [T27], providing us with a small but telling example of al-Khūnajī's pivotal role in post-Avicennan logic.

Texts from: Aristotle, Avicenna, Bahmanyār, al-Sāwī, Ibn al-Ṣalāḥ, al-Jīlī, al-Suhrawardī, al-Rāzī, al-Khūnajī, al-Abharī, al-Ṭūsī, al-Kātibī, al-Urmawī, al-Samarqandī, al-Ḥillī

[T1] Aristotle, *Prior Analytics*, 24^{b}18–26 [trans. Striker, mod.]

[*Aristotle's definition of "syllogism"*]

A syllogism is an argument in which, certain things being posited, something other than what was laid down follows by necessity because these things are so. By "because these things are so" I mean that it results through these, and by "resulting through these" I mean that no term is required from outside for the necessity to come about. Now I call a syllogism perfect if it requires nothing beyond the things posited for the necessity to be evident; I call a syllogism imperfect if it requires one or more things that are indeed necessary because of the terms laid down, but that have not been taken among the premises.

[T2] Avicenna, *Shifāʾ, Manṭiq, Qiyās*, 54.6–55.10

[*Avicenna's definition of "syllogism," and the distinction between spoken and mental syllogisms*]

A syllogism is a discourse (*qawl*) in which, if more than one thing is posited, something other than what was posited follows from these things by necessity, and not accidentally, but essentially.

So discourse here is, as it were, the genus of "syllogism." It should be considered whether it is a genus for the syllogism that is understood and conceived in the soul, or a genus for the spoken syllogism. *We say*: "syllogism" is said indistinctly of both things. That is, it is said of the compound thoughts assembled in the soul that lead to an assent to something else in the soul, and of the statement composed of propositions from which another proposition follows, and not only insofar as it is a statement that is heard [by someone]. For statements that are heard do not at all imply another statement [being spoken and heard]. The

utterance, just insofar as it is an utterance, does not necessitate that some other utterance does or does not follow it; rather, it is only insofar as it is a statement that is heard that it signifies a meaning that is understood. And this not merely insofar as it is a statement that is heard, and that signifies a meaning that is understood—on the basis that it is a statement heard by someone who is listening to it—but [55] simply because it is a statement that is heard, absolutely and without specification of any language. For it is not right to say that the implicand (*lāzim*) and the implicate (*malzūm*) are something that one language may signify but not another; rather, this is meant absolutely and in whichever language it may be. The meaning of "implicand" is: that utterance whose meaning is to be established.

Just as "syllogism" is said of both of these [sc. the one in the mind and the one that is spoken], the statement that is like a genus for the syllogism [i.e. Aristotle's definition] is said of both. The syllogism that is heard, in the sense just explained, has as its genus "statement that is heard"; while the syllogism that is understood [in the mind] has as its genus "statement whose meaning is understood."

But the mental syllogism alone suffices in order to reach the aim of the syllogism, when what is sought is a demonstrative proof. As for Dialectic, Rhetoric, Sophistic, and Poetics, in these cases the heard syllogism is indispensable in order for their respective aims to be reached. And likewise with the examinations that they use. All that we shall mention in its due place. So, this is the meaning of the received opinion on the genus of the syllogism.

[T3] Avicenna, *Shifāʾ, Manṭiq, Qiyās*, 66.4–67.2

[*Avicenna's doubts regarding Aristotle's definition of "syllogism"*]

But some doubts may apply to what has been said above [sc. the definition of syllogism discussed in T2]. (a) One of them is that sometimes the implications are not necessary, but rather contingent, but [such a] syllogism is still a syllogism. (b) Another is that dialectical syllogisms are syllogisms, but what is implied in them is not implied with necessity; rather it [just] prevails in terms of belief (*ẓann*). Nor is the implication of what follows in rhetorical [syllogisms] necessary. (c) Again, in hypothetical syllogisms the conclusion may be something that was already in the premises. So if you were to say: "If the sun is up, then it is day; but the sun is up; therefore, it is day," then what follows was already included in the premises that were posited; so you would make

the hypothetical syllogism fall outside this definition. Likewise, when you say: "Either motion exists, or does not; but motion does exist," then the conclusion is the contrary of the second disjunct, and the same as what was said in the first disjunct. This is why when you say: "Motion does exist" the conclusion follows: "Therefore, motion exists." (d) Even worse than this example is the following: "If motion exists, then motion exists; but motion exists; therefore, motion exists." *They also said*: if there is an automatic inference (*muqāyīs*), the conclusion is made necessary by a [67] single statement, like when someone says: "So-and-so moves [of his own accord]; therefore, he is alive" or "'Abdullāh is writing; therefore, his hand is moving."

[T4] Avicenna, *Shifāʾ, Manṭiq, Qiyās*, 67.3–68.5

[*Avicenna's solutions to the three doubts in T3*]

(a) *Concerning the first doubt*, it may be resolved by recalling what we said: that the meaning of "follows necessarily" is not that what follows is itself a necessary statement, but that its following from the syllogism is necessary. This is so whether it is false in itself, or necessarily true, or contingent rather than necessary. Even something absurd or something contingent may follow necessarily from something else, once that thing is conceded, without being in itself necessary.

(b) *Concerning the second doubt*, it might be said that what is meant by "following (*lāzim*)" is either what *really* (*bi-l-ḥaqīqa*) follows, or what does so in a persuasive manner. But this is not correct, for what is meant by "following" is the concept of real, not metaphorical, following. Even so, the doubt is resolved, because dialectical and other such syllogisms are still syllogisms. For the conclusion will follow from whatever [the premises] include, once that is conceded, even though what they include is itself doubtful, because such premises are doubtful by the very nature of the case (*fī amrihā*). But when it comes to the syllogism being a statement such that a conclusion necessarily follows from what it includes, this is a feature shared by all of them.

(c) *Concerning the third doubt*, it is resolved by realizing that "something other than what was posited results from these things" does not refer to [premises] that have been accepted. It is the accepted [premises] in which there is truth and falsity. When we say "then it is day" [i.e. the consequent of the hypothetical premise] this is not in itself accepted or rejected because it is true or false. [68] Rather, what was accepted is something of which this is just a part. When we

say "if the sun is up, then it is day" *this* as a single whole is what is accepted, and for the time being there is no accepting of any of its parts; it may indeed be that in isolation, none of the parts are accepted. So when you say "if man is a stone, then he is an inorganic object," neither of the two is accepted, but the premise [as a whole] is, because the accepting here concerns the way the two statements are related (*ḥāl al-nisba bayna al-qawlayn*).

[T5] Avicenna, *Shifāʾ, Manṭiq, Qiyās*, 68.13–71.4

[*Avicenna's solutions to the last doubt*]

(d) *Concerning the last doubt*, where we say: "If motion exists, then motion exists; but motion exists; therefore, motion exists"—this doubt may be resolved in several ways.

First, this statement is not a syllogism at all, for a syllogism is something that is of use to induce acceptance, but this [statement] is of no use whatsoever. Not everything from which something follows is a syllogism, whatever it may be. Rather, [69] what follows from it must be something for which it was useful to yield acceptance. One will not accept, on the basis of the whole [statement], something that was only posited as an assumption within that whole. Since then this is not a syllogism, we need not even say that if something is a syllogism, then what follows from it is something different from what was posited [i.e. since this is already implied by the notion of a syllogism anyway].

Second, neither is what is accepted a conclusion. For what is accepted is "but motion exists," which is connected [to the rest] by the utterance "but." Likewise, "therefore, motion exists" is connected by "therefore" (*al-fāʾ al-wāṣila*). So what is put as the conclusion, i.e., that there is motion, is part of what was accepted, not *the same* as what was accepted. The proof for this is that if someone says: "motion exists"—but without deploying a conjunction (*ʿalā sabīl al-ʿaṭf*) that signifies the repetition, so that it's tantamount to saying "And along with that, it is true that motion exists," so that "Motion exists" is like a subject, and one may predicate of it—it will then furthermore be true that nothing follows from these two statements. If something does follow, then it will do so together with a realization that this [part] is being repeated, and the fact that motion exists is, in the mind, made part of the proposition whose predicate is the repetition. So in this case, what follows does indeed follow.

This is also how things stand with the example that involved disjunction [i.e. in T3: "Either motion exists, or does not; but motion does exist …"]: the same sorts of answer will work here. But the truth is that this is not even a syllogism. I do not say that the disjunctive premise, both affirmative and negative, is not syllogistic, for it may indeed be included in syllogisms. But I do say that their use for connecting them to the repetition of the contrary, as was said in the doubt above, does not lead to a syllogism. When someone says "either motion exists, or does not," then he has put forth [70] these words to clarify by them something that is not known, or to obtain something unknown that was not established before. When he then says: "but motion does exist," he makes this a part of the syllogism in order to make clear that motion exists. But this is still not a syllogism, because the intended conclusion is already clear and has been accepted, even before the syllogism is put together for it. If the syllogism is for the sake of clarifying something, [in this case] it can be dispensed with. But if it aims to infer something that has been denied, then the interlocutor will not accept that motion exists, just because it has been reiterated. Since he will not accept this, it also cannot be reached [as a conclusion] from such a syllogism. Furthermore, if this is not a straightforward negation, but rather some sort of metathesis, then in that case the conclusion will not be what was mentioned, but instead "motion is not non-existent (*al-ḥaraka laysat ghayr mawjūda*)"—which is not the same as "motion exists (*al-ḥaraka mawjūda*)." If this was [however actually] implied, then the two implications would have to be interchangeable in meaning, as you have learned several times.

As for the other examples [at the end of T3], they are complete only with a hidden premise that is understood implicitly, so that in one of them [the premise] "whatever moves is alive" is hidden, in the other "wherever there is a lamp, there is light," which is a hypothetical. And in the third, "whoever writes, moves his hand."

This all is in accordance with the definition of the syllogism. Now you should know that a syllogism may be perfect, [71] in which case it is obvious from its form that the acceptance of the conclusion follows from it, or it may be imperfect, in which case it is not clear what follows from it. It becomes clear only once it is changed in such a way that it becomes a perfect syllogism. This change is applicable to it by itself and to its terms, not to anything else that enters into it. This change conserves the truth of what was originally accepted in it.

[T6] Avicenna, *Ishārāt,* 138.9–139.6 [trans. Inati, mod.]

[***definition and terminology of the syllogism***]

The syllogism is the underpinning (*ʿumda*). It is a statement composed of [sub-]statements such that, if the propositions brought forward in it are accepted, then this all on its own leads to another statement. If the propositions are given in something like what is called "syllogism," "induction," or "analogy," then they are called "premises." The premise, therefore, is a proposition which has become part of a syllogism or argument.

The essential parts of what is called the "premise," which are what remains after the analysis into primary single elements, and which are the smallest parts of which the proposition is composed, are called "terms." [139] For example: from "Every J is B" and "Every B is A" follows "Every J is A." [Here] each of our statements "Every J is B" and "Every B is A" is a premise, while J, B, and A are terms, and the statement "Every J is A" is a conclusion. What is composed of two premises, in the manner just illustrated, so that it necessarily leads to this conclusion, is the syllogism.

It is not a condition of [this kind of proof] that propositions be accepted, in order that it be a syllogism. Rather, the condition for it is that, *if* its propositions are accepted, *then* another statement follows from them. This is the condition for its being a syllogism (*qiyāsiyya*).

[T7] Avicenna, *Ishārāt,* 139.22–140.12 [trans. Inati, mod.]

[***the two types of syllogism: combinatorial and reiterative***]

The syllogism as determined by us, is of two kinds, combinatorial and reiterative.

The combinatorial syllogism is one in which there is no explicit mention of either one of the two contradictory sides contained in the conclusion. Rather, this will be [present] in it only potentially, as in the abovementioned example [sc. in T6].

Whereas in the reiterative syllogism, this is explicitly mentioned. For instance when you say, "If ʿAbdullāh is rich, he is not unjust; but he is rich; therefore: he is not unjust." Thus, you find in this syllogism [an explicit mention of] one of the two contradictory sides contained in the conclusion—in fact it just is the

conclusion [i.e., "he is not unjust"]. Another example would be if you say, "if this [140] fever is a one-day fever, it does not produce a great change in pulse; but it has produced a great change in pulse; therefore: it is not a one-day fever." Again, you find in this syllogism [an explicit mention] of one of the two contradictory sides—which in this case is the contradictory of the conclusion [i.e., "it is a one-day fever"].

Combinatorial syllogisms may consist of simple categorical propositions, simple hypothetical propositions, or they may be composed of the two. Those which consist of simple hypothetical propositions may be formed of simple connective propositions, simple disjunctive propositions, or they may be composed of the two. Most logicians have only paid attention to categorical propositions, thinking that hypothetical syllogisms must be reiterative.[5]

We will mention categorical syllogisms with their various types. This will be followed by [a discussion of] some hypothetical combinatorial syllogisms, the ones that are most useful and which have the strongest hold on our natures. After that we will [treat] reiterative syllogisms. Finally, we will mention some states which the syllogism undergoes, and the syllogism that is a *reductio ad absurdum*. We will limit ourselves in this summary to this much.

[T8] **Bahmanyār, *Taḥṣīl*, 106.1–107.15**

[***the art of proof and the parts of the syllogism***]

You should know that proof (*istidlāl*) is an art that leads to a goal, and every art is connected to some matter and form. The subject-matter of an art varies in virtue of the difference of its matter and form. Likewise, proof may differ either with regard to differences in what it is composed of, or differences in how it is composed—that is, whether it is composed well or not. The goal of proof is the obtaining of knowledge, or put alternatively, reasoning (*ẓann*) in such a way as to acquire [new knowledge]. The underpinning in all this is the

5 For the ways in which hypothetical propositions may feature in combinatorial syllogisms, see *Ishārāt*, p. 157 ff. An example of a mixed categorical-hypothetical combinatorial syllogism is:

If A is B, then J is D
Every D is H
Therefore: If A is B, then every J is H

e.g. If a dog is a poodle, its hair is curly
All curly hair is hard to clean
Therefore: If a dog is a poodle, its hair is hard to clean.

syllogism. The matter of the syllogism is what [was introduced above] and to which assent is given, while its form is the description and composition that apply to it.

You should know that it is not possible to acquire knowledge of something [as yet] unknown from just any anything whatever that is already known; rather, the knowledge [one already has] has a specific relation to what is [as yet] unknown. And likewise, a specific composition. In general, there must inevitably be primary assents which are not acquired by reflection; otherwise there would be no way to [107] acquire secondary [assents], and everything that one seeks to acquire through the syllogism would become a premise in another syllogism, so that one would be devoting one's effort to a task that might be endless.

Custom has it that the syllogistic science is called "converse analysis (*al-taḥlīl bi-l-ʿaks*)," which is the same as composition (*tarkīb*). For a syllogism is only a syllogism when you have a defined object of inquiry, and you seek it by [figuring out] what produces this object as a conclusion. What shows this object of inquiry for you has parts, which are called the middle term and the extreme terms; so [the procedure] is really a converse analysis [i.e. one works backwards from what one wishes to prove to the syllogism that proves it]. In the same way, its opposite is called synthesis (*tarkīb*). If a syllogism is assembled in a chance way and leads to a conclusion that was not sought beforehand, it is not really a syllogism.

A premise is a declarative statement that is made part of a syllogism. [Being part of a syllogism] is however not a specific difference that attaches to the premise; otherwise, if I were to remove this attribute from the premise, its essence would perish, and it would no longer be a declarative statement. Just as this applies to quantified, unquantified, and particular propositions, so it does to the premises.

The definition of that into which the premise is analyzed, I mean if the premise is broken up so that nothing but the subject and the predicate remain, this (once the analysis is performed) is called a "term." As for the copula, it does not remain, as it is in general not something into which a premise is analyzed. In hypothetical [premises] it is the conditional and the disjunctive particles [that are analogous to the copula].

[T9] Bahmanyār, *Taḥṣīl*, 108.1–111.5

[*on the definition of "syllogism"*]

A syllogism is a statement in which, if more than one thing are posited, something other than what was posited follows from these things by necessity, and not accidentally, but essentially. […]

[109.15] You should know that the meaning of "following" is that if you accept these things, then you must accept the second statement [sc. the conclusion]. But this does not require that the second statement be true. To say "from this, that follows" is more general than saying, "what follows from it is true." […]

[111.1] In hypothetical syllogisms what is accepted in them is not the conclusion. What is accepted in them is the truth or falsity that accrues to the hypothetical premise, as it is [stated]. What is accepted here is only the state of the relation between the antecedent and the consequent, not one of the parts, which is the conclusion. Thus when we say "If the sun is up it is day," it is this that is accepted, whereas the conclusion is one of its two parts [sc. "it is day"]. So what is accepted here is not the conclusion.

[T10] Al-Sāwī, *Baṣā'ir*, 139.3–140.1

[*how the study of the syllogism fits into logic*]

Knowledge of the argument (*ḥujja*) is the most important goal in logic. The [argument] itself is composite, and knowledge of a composite arises only once there is knowledge of that of which it is composed. The argument is composed of propositions, which are in turn composed of simple [utterances]. This is why the beginning of our exposition was about simple meanings and simple utterances, and the composition of propositions in their [different] types, so that we could provide a clear account of all this. Now, we ought to take stock, so as to make known the argument and its divisions.

The argument is a statement composed of [sub-]statements which aim at the production of assent to some other statement, to which one did not [previously] assent. There are three types: syllogism, induction, and analogy. Each of those has [forms] that are close to it, like enthymeme, [140] proof, opinion, and sign. In general, what underpins conviction in all of them is the syllogism.

[T11] Al-Sāwī, *Baṣā'ir*, 140.1–140.11

[***explanation of the definition of the syllogism***]

[The syllogism] is a statement composed of propositions such that, if they are accepted, another statement follows from it all on its own. "Composed of propositions" serves to distinguish the syllogism from a single proposition, whose truth implies the falsity of its contradictory and the truth of its conversion, and other such immediate implications. By "if they are accepted" we do not mean that the accepted premise is in itself true. Indeed, unbeknownst to us, it may be false in itself; but even so, *if* it is accepted, once it is composed [in a syllogism] there follows from it another statement. "There follows from it" serves to distinguish between syllogisms and inductions and what is counted together with them, since upon verification nothing follows from these. "All on its own" tells us that the things that follow do so not because of a specific matter [i.e. content], so that if something else were substituted [for that content] what follows would no longer follow. For example: "No human is a horse; all horses neigh." What follows with regard to "human" and "neighing" is that neighing is denied of humans. But now, if something that is not coextensive with "horse" is substituted in the predication, that denial might not follow anymore. For example, when "neighing" is replaced by "animal," then what follows is that "animal" is *affirmed* of "human." The expression "necessarily" has been added to the definition [of the syllogism by some people] to exclude such [cases], but it is superfluous.

[T12] Al-Sāwī, *Baṣā'ir*, 140.11–141.4

[***omitted and implied premises***]

In some cases, what follows does so with no need for any connection to another thing which would ensure that it does indeed follow, whether this be entirely omitted without anything standing in for it, or a stand-in that has the same force [as what would complete the implication]. A prime example for [complete] omission is "A is equal to B; B is equal to J; therefore, A is equal to J": it does not follow from this statement alone that A is equal to J. Rather, this only follows [with the addition of] something else that has been omitted, namely "A is equal to the equal of J; and the equal of an equal is equal." From this it now does follow that A is equal to J. According to the aforementioned account, there was no syllogism for what was taken to follow, since it did not follow from it "all on its own."

As for the stand-in that has the same force [an example would be]: "Removing a part of a substance necessarily removes the substance; the removal of something that is not a substance does not remove the substance; therefore, a part of a substance is a substance." The conclusion does not follow from what is explicitly said here. Rather, [the conclusion is implied] by another premise that is omitted and needs to be connected to the first premise, namely "That whose removal necessarily removes the substance is a substance." But the [explicitly] mentioned premise, namely that "the removal of something that is not a substance does not remove the substance," has the same force as the omitted premise. One might easily suppose that the conclusion does follow when [the second, actually mentioned premise] is connected to the first premise, but this is not so.

In order to hedge [the definition] against such specific cases, he [Avicenna, in T2] adduced an addition to the definition, namely "all on its own, and not [141] accidentally." But this addition would only be needed if it were possible that something followed from it all on its own, but accidentally; then one would need to hedge the definition against such a case. But in fact this is not possible. In the example we just mentioned nothing follows from what is explicitly stated all on its own, so the phrase "all on its own" already excludes that, without adding "and not accidentally."

[T13] Al-Sāwī, *Baṣā'ir*, 141.6–9

[*form and matter of the syllogism*]

You should know that these propositions are called the "matter" of the syllogism, and the specific composition in which they are arranged the "form" of the syllogism. Syllogisms are classified as demonstrative, dialectical, sophistical, rhetorical, and poetic, due to their variation in matter; but they all share a single form. Since there is a specific matter for each [type of syllogism] but the form is shared in general by all, and it is more appropriate for inquiry to proceed from the general to the specific, let us begin by first explaining the form of the syllogism.

[T14] Al-Sāwī, *Baṣā'ir*, 141.13–21

[*terminology and examples for the parts of a syllogism*]

When propositions are composed to form a syllogism, they become its parts and are then called premises. The essential parts of the premises that remain after analysis are called terms. When the categorical premise is analyzed into its essential parts, [only] subject and predicate remain; the quantifier and modal operator are not essential to the proposition. As for the copula, even though it is essential [to the proposition], it is an utterance signifying the connection [between subject and predicate], and this connection no longer remains after analysis.

Let us then give examples for syllogism, premise, and terms: from "Every body is composite; every composite is created" it follows that "every body is created." "Every body is composite" is one premise, "Every composite is created" the other premise. Their parts are "body," "composite," and "created" which are the terms. Both premises together, in the order in which we presented them, are the syllogism. What follows from it is "Every body is created" and this, once it is shown to follow, is called the conclusion. Before its following is grasped by the mind in the arrangement and setting up of the syllogism, [this same proposition] is called the object of inquiry (*maṭlūb*).

[T15] Al-Sāwī, *Baṣā'ir*, 141.22–142.2

[*combinatorial and reiterative syllogisms*]

If what follows, or its contradictory, is not actually mentioned in the syllogism but only contained potentially, then such syllogisms are called combinatorial—as in the above example [in T14]. What follows, namely "Every body is created," or its contradictory, is not actually explicitly mentioned in [the syllogism], but is contained in it potentially, because ["body"] falls under "composite," and this is made explicit by "every composite is created." If, on the other hand, [the conclusion] or its contradictory is actually mentioned in [the syllogism], then it is called reiterative. For instance, from "If this number is odd, then it cannot be divided into equal [numbers]; but it is odd" there follows "It cannot be divided into equal numbers," [142] which has actually been mentioned in the same form in the syllogism. Likewise, if you repeat in this example "but it can be divided into two equal numbers," there follows that "It is not odd." The contradictory of this implication—"This number is odd"—is actually mentioned in the [syllogism].

[T16] Al-Sāwī, *Baṣā'ir*, 142.3–11

[*categorical and hypothetical syllogisms*]

Combinatorial syllogisms may consist of categorical premises only, or of hypothetical premises only, or may be put together from both categorical and hypothetical premises. Let us begin with the simple categorical ones. They are inevitably composed of two premises that share a middle term. In the above example [in T14] it is "composite," and it is called the middle term. Each of the premises has another term specific to it, like "body" in the first premise of the example, and "created" in the second. The conclusion obtains from both premises together. What is the subject in the conclusion is called the minor term, while the predicate in it is called the major term. The premise containing the minor term is called the minor premise, and the premise containing the major term is called the major premise. The composition of both premises is called the combination. Those combinations that produce a conclusion all on their own are called syllogisms, and the form of the syllogism in terms of the relation of the middle term to the extreme terms is called a figure.

[T17] Al-Sāwī, *Baṣā'ir*, 142.12–22

[*the fourth figure rejected*]

This relation falls in its correct classification into four types. (a) If the middle term is the predicate in the minor premise and the subject in the major premise it is called the first figure. It may also be (b) the subject of the minor premise and the predicate of the major premise, or (c) a predicate in both, or else (d) a subject in both. (b) But the second class, even if it must be included in the classification, is not [usually] expressed, because it is remote from nature and to make conspicuous what follows from it, one has to apply a troublesome inquiry, even though one can do without it. As for the remaining two figures (c) and (d), what follows from them may not be clear by itself, but it is nevertheless close to nature. A person of astute understanding might show that these two are [validly] syllogistic, prior to showing something else, but still his mind will more readily come to this thing that is shown [than to accept these two figures]. This is why the two are not considered to be on a par, insofar as one discards what is opposed to the first figure.

Hence, the categorical figures that are used are three. They all share in the fact that there is no syllogism consisting of two particular [premises] absolutely, no syllogism consisting of two negations, and no syllogism with a negated minor

premise and a particular major premise, except in the case of contingent *de re* modality, as you will learn, and that the conclusion follows the weaker of the premises in quantity and quality, unless they fall under the exceptions we are going to make.

[T18] Ibn al-Ṣalāḥ, *Maqāla fī l-shakl al-rābiʿ*, fol. 122^{v}4–123^{r}3 [trans. Sabra 1965, 17–18, mod.]

[***history of the debate over the fourth figure***]

We have found most logicians omit this figure and fail to mention it, so that the large commentaries on the *Prior Analytics* do not refer to it at all. The exceptions which do mention it either discard it, for the reason that it is remote from nature—as we find in the greatest book which the Master Avicenna has composed and called *The Cure*, in the fourth section of the first treatise on the syllogism—or completely reject it, saying that it is not required by the division [of the figures], as we find in the commentary of Abū l-Faraj ibn al-Ṭayyib on the *Book on the Syllogism*. Thus he criticizes Galen and accuses him of error, not by producing any evidence whatsoever, but by merely saying that while Galen distinguished himself in medical matters, he is not to be trusted in matters of logic. Aḥmad ibn al-Ṭayyib al-Sarakhshī said in his *Abridgement of the Analytics* that a man mentioned to his teacher Yaʿqūb ibn Isḥāq al-Kindī that he possessed a Syriac treatise of Galen's expressing the same opinion. But al-Kindī denied that, and said a rational division requires only three figures, no more: he did not recognize a fourth figure. It has also been related that Abū Naṣr al-Fārābī has a discussion (*kalām*) of the invalidation and rejection of this figure, which I have not seen. These, then, are the books we have found which refer to this figure. As for the other books and commentaries which have come down to us from Aristotle, Alexander, Porphyry and others among the ancients and moderns, we have not found them referring to it. Rather, they divide the figures into three, and state that there is no fourth. We have found that Galen did the same in the ninth section of [his] *Book on Demonstration*. For he divided the categorical figures into three only and asserted that there is no fourth; he did the same in book *On the Enumeration of the Syllogisms*. These are the only two of his logical books that we have seen, in spite of their large number indicated in the *Fihrist*. Now there came our way a treatise by a man called *Dinḥā* the priest, entitled *The Fourth Figure of Galen*. When we looked into it we found it defective in the enumeration of its moods, and in his regarding some sterile moods as productive and in [his] badly understanding [123^{r}] the first figure to which this figure is reduced. When we noted this, we inquired into this figure

and into the conditions for the three known figures and what distinguishes it from them. [We have also inquired into] the enumerations of its moods one by one, and we have proved those that are productive and have shown those that are sterile and pointed them out.

[T19] Al-Jīlī, *al-Lāmiʿ fī l-shakl al-rābiʿ*, 220.8–12 [trans. El-Rouayheb 2019, 26]

[***an early rehabilitation of the fourth figure***]

I have seen that the notable among philosophers and the great among scholars have omitted the fourth figure from their books, and have considered it among the futile and insignificant matters, claiming that it is too intricate for natural disposition and too remote from satisfactory investigation. Into my soul came an urge to look into extracting it, and an inclination to contemplate it with a view to presenting its proofs. I found it not to be so remote as they described, and have discovered things the like of which they have not seen. I will therefore make clear its conditions of productivity, and give the details of its moods and their conclusions.

[T20] Al-Suhrawardī, *Manṭiq al-Talwīḥāt*, 46.6–48.6

[***the formal argument and the definition of the syllogism***]

You should know that an argument is a statement composed of [sub-]statements, which aims at the occurrence of assent to another statement. There are different types, but the underpinning of all types is the syllogism. We shall mention the remaining types, God willing.

A syllogism is a statement composed of propositions such that if they are accepted, there follows from it—all on its own—another statement. If it were not for the specification that the composition consists of [multiple] propositions, then a single proposition from which, all on its own, there follows the truth of its converse and the contraposition,[6] would not fall outside the definition [of the syllogism]. "All on its own" serves to exclude the sterile case where

6 In a "contraposition (*ʿaks al-naqīḍ*)," what contradicts the subject is made the predicate, and what contradicts the predicate is made the subject. Thus "No odd numbers are evenly divisible" has both the implications "Nothing evenly divisible is an odd number" (the converse) and "Nothing that is not evenly divisible is an even number" (the contraposition).

its conclusion happens to be true due to special features of the matter, or other such cases, like when the conclusion of the syllogism does not follow as a conclusion except by means of another premise that has not been not mentioned. […]

[*reiterative syllogisms*]

[47.7] A syllogism must be either such that the conclusion or its contradictory is mentioned in it, or not. If it is, then it is called reiterative, as in "If the sun is up, it is day; but the sun is up; therefore, it is day." Here, one of the contradictory pair of the conclusion is mentioned, namely the conclusion itself. […]

[*rejection of the fourth figure*]

[48.5] [The fourth figure] which is the opposite of the first, is remote from nature and intuitively does not seem to be a syllogism, and requires troublesome elucidation, which is why it was dropped.

[T21] Al-Rāzī, *Manṭiq al-Mulakhkhaṣ*, 243.1–245.4

[*comments on the definition of "syllogism"*]

A syllogism is a statement composed of propositions such that if they are accepted, another statement follows from it all on its own.

"Of propositions" is meant to distinguish it from a simple premise from which follow its converse, its contraposition, and the falsity of its contradiction, whereas a syllogism is always composed of two premises. *Let no one say*: this is wrong, [in light of examples like] "So-and-so moves [voluntarily], so he is alive," or "When the sun is up, it is day," because we reach a conclusion from the first [part of each statement]. For here the syllogism is only made complete with another implicit premise, which would be "Everything that moves [voluntarily] is alive." The same answer applies to the second [example], because the conclusion only follows from it, so long as one believes that the presence of day does follows from the fact that the sun is up; then [244] one will believe that the sun is [actually] up.

By "when [the premises] are accepted" we do not mean that they are accepted in themselves, but that they are such that *if* they were accepted, then what is sought *would* follow from them. In that way any type of syllogism is included [in the definition].

"Follows from it" is more general than "following *evidently* (*al-luzūm al-bayyin*)," which is why both the perfect [syllogism] and others [where the inference is not evident] are subsumed under the definition.

"All on its own" distinguishes [the syllogism] from two other things. First, [cases in which] those propositions do not necessarily conclude in another proposition when they are the case. If you say "A is equal to B" and "B is equal to J," then it is thought to be obvious that it produces the conclusion "A is equal to J." But upon closer inspection (*taḥqīq*), this conclusion does not follow from them. Rather, the implication is "A is equal to what is equal to J"; only then, if you say "what is equal to the equal is equal," does the conclusion follow. Second, [cases in which] this implication is not due to a premise being among the concomitants of the mentioned premises, like when you prove that a part of a substance is a substance: "Eliminating part of a substance eliminates the substance; and what is not a substance will not necessarily eliminate substance when it itself is eliminated; therefore, a part of a substance is a substance." This does follow from what was said, but not on account of the major premise that was actually mentioned, but because of the contraposition, namely "That whose elimination necessarily eliminates a substance, is itself a substance."

And we also have to say [in the definition] "another statement," that is, a conclusion distinct from the premises.

This then is the well-known explication for the description [of the syllogism]. *I say*: What is intended by the "statement," [245] from which the acceptance of the conclusion follows once its premises are accepted, is not the linguistic statement (*al-qawl al-lisānī*). Someone who utters the premises is under no obligation to utter the conclusion. [What is intended] are rather thoughts in the soul (*al-afkār al-nafsāniyya*). And a thought is nothing but the co-presence of items of knowledge or beliefs, ordered in a specific way such that from their occurrence there follows, in the mind, the occurrence of knowledge or belief about something else.

[T22] Al-Rāzī, *Manṭiq al-Mulakhkhaṣ*, 245.5–247.12

[***two doubts about the syllogism***]

Now, someone might raise doubts, as follows.

[*First doubt*]: what is required for the occurrence of a conclusion in the mind is either (a) those items of knowledge taken together, or (b) each one of them [individually]. This first [option] is false, for three reasons.

(a1) Two items of knowledge cannot exist in the mind [together], so there will be no cause for anything. As for the first [claim, that two items of knowledge cannot exist together in the mind], this is because we find through introspection (*min anfusinā*) that, when we turn our mind towards the knowledge of something, it is impossible for us in that same moment to turn to another item of knowledge. Once one tries it out, one knows necessarily that this is so. As for the second [claim, that there will be no cause for the conclusion], this is because if something has no existence in itself, it cannot cause the existence of anything else.

(a2) Whatever makes something exist must itself exist when its effect occurs. Now, if the thought (*fikr*) comes down to these items of knowledge as being ordered so as to make the conclusion exist, it would follow that the sought item of knowledge would [already] occur when thought is seeking it, which is absurd. For we find [246] necessarily through introspection that, when we are thinking, we do not have knowledge of the sought [conclusion] yet. This is because thought is seeking knowledge, and it is absurd to seek what is already there.

(a3) If each of these two items of knowledge does not cause the conclusion individually, then once they are put together, either (a3a) some change occurs—that is, either something happens that hadn't yet, or something that was there ceases—or (a3b) no [change] occurs.

If the former (a3a), then what is required for this change is either (a3a1) each of the two individually, or (a3a2) their combination.

If the former (a3a1), then each of the two will independently ensure that this change takes place. So, since this change independently ensures the conclusion, and [on the current assumption] each of the premises independently ensures the conclusion, each of them will be productive of the conclusion [which is absurd]. But if they are not independent [in yielding the conclusion], then the argument is the same as before.

If the latter (a3a2), then inevitably something beyond each of the two [premises] in themselves must happen once they are together, so that from

their being together it follows that this additional thing happens. But then the argument is the same as before, and a regress follows.

(a3b) If, now, their being together does not lead to the occurrence of any change whatsoever, then the situation of the two premises when they are together is the same as their situation on their own. If neither of the premises independently yields the conclusion when it is on its own, neither will it do so when they are together.

(b) *Now someone might say*: "what ensures the occurrence of this conclusion is each single one of these [247] two items of knowledge." But this [too] is false. *First*, one knows necessarily that neither of the premises independently ensures the conclusion. *Second*, if each of them ensured [the conclusion] independently, then multiple independent causes would come together to produce a single effect. But this is absurd. And if the independent [cause] is just one [of the premises], then mentioning the other would be superfluous (*ḥashwan*).

[*Second*] *doubt*: knowledge of the conclusion either (a) follows from knowledge of the two premises, or (b) does not.

(b) If the latter, then the following [of the conclusion] is undermined, in which case your claim [as to the definition of the syllogism] is wrong.

(a) If the former, then either (a1) knowledge of the premises is necessary, or (a2) it is not.

(a1) If it is, then what necessarily follows from what is necessary is itself necessary; so all items of knowledge into which we inquire would have to occur [straightaway]. (a2) If it is not, then this ensures that the knowledge of the premises is a matter of inquiry. Then, the argument is the same as the first case [where the knowledge of the premises was insufficient for producing knowledge of the conclusion]. This either leads to a regress, which is absurd, or to necessary premises, which brings us back to the [problem that everything will necessarily] follow, or to premises that are unknown; but in that case the items of knowledge that follow from them will also be unknown.

[T23] Al-Rāzī, *Manṭiq al-Mulakhkhaṣ*, 247.13–248.7

[*Al-Rāzī's solutions to both doubts in T22*]

Response to the first [*doubt*]: what makes the conclusion necessary is [in fact] those items of knowledge taken together. When [the objector] says "the items of knowledge are not together [in the mind]," [step (a1) of the first doubt in T22], we respond that we do not concede this, and we will produce the explanation for this in the part on philosophy (*fī l-ḥikma*).[7] When he says, "it follows that thought is linked to knowledge of the sought conclusion" [step (a2)], we respond that these items of knowledge are only a thought on account of their occurring in a temporal sequence. Insofar as they are such, they do not make knowledge of the conclusion necessary. But [248] insofar as they are what they are, with a view to their true realities, they are knowledge of the premises. It is not impossible that they be together with knowledge of the conclusion. As for his saying that either [the conclusion] occurs once these items of knowledge are together, as something that had not yet occurred when they were separate, or this is not the case [step (a3)], we reply that doubtless a form (*hay'a*) of togetherness does occur for them, but in such a way that you [first] understand their having occurred, and then they make you understand the conclusion.

As for the second doubt, the response to it is that inquiry only concerns those primary items of knowledge [insofar as they are] arranged in a temporal succession. If distinct causes in the mind entail their occurrence, then the occurrence of derivative knowledge is necessary; otherwise it is not.

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7 There, he states: "On the possibility of jointly grasping several objects at a single stroke. Concerning conceptions, [this is possible] because if it weren't, then no assent would ever come about. For the relation (*nisba*) between one thing and another is only possible if both things are grasped. The falsity of the consequent here indicates the falsity of the antecedent. Moreover, one may conceptualize a compound by means of its definition, and this is only possible when all its parts are conceptualized at once. Concerning assents, [this is possible] because if it weren't, then only a single premise could ever occur in the mind. If this were the case, no conclusion would ever occur, for we know by necessity that no single premise is ever productive of a conclusion. The falsity of the consequent here indicates the falsity of the antecedent. Anyone who says that when we turn our mind to an object of knowledge, it is impossible for us to turn to another object of knowledge [at the same time], must be referring to our imagination (*khayāl*), not to our intellect with which we may well [do these things]." F. al-Rāzī (2021). *al-Mulakhkhaṣ fī al-manṭiq wa-l-ḥikma*. 2 vols. Ed. İ. Hanoğlu (Amman: 2021), 379.9–380.2.

[T24] Al-Khūnajī, *Kashf al-Asrār*, 235.12–238.4

[***restatement of the doubts raised by Avicenna in T3***]

[Avicenna] advanced some doubts concerning the description [of the syllogism] mentioned above.

First: the implication [contained in a syllogism] may not be necessary, as is the case with a conclusion that is [merely] contingent, or absolute. Likewise, what follows in rhetorical and dialectical [arguments].

[236] *Second*: what follows may be part of what was posited in the syllogism, as in the reiterative syllogism, from which one seeks to obtain the consequent, which is however already present in the hypothetical premise of the syllogism.

Third: when we say "either motion exists or it does not," and then "but it does exist," it follows that "motion exists," here [the conclusion] is the same as one of the premises. Likewise, when we say "if motion were to exist, then motion would exist," and then "but in fact, motion exists," then there follows "motion exists." Furthermore the patterns in combinatorial syllogisms behave the same way, like "Every J is B, every B is B, therefore, every J is B," or "Every J is J, every J is B, therefore, every J is B," and so forth for the remaining forms. Similar examples can be devised in hypothetical combinatorial syllogisms, and generally whenever the middle term coincides with one of the [other] terms.

Fourth: there are simple propositions from which the intended conclusions follow [immediately], so that they are already syllogistically productive, as when we say "So-and-so says the sun is up, hence he speaks truly" and "'Abdullāh is writing, so he is moving his hand," and the like.

[***solutions to the doubts***]

Response to the first: the necessity is a quality of the inference (*al-luzūm*), not what follows from the inference (*al-lāzim*), and the difference between the two is clear. For what follows, and that from which it follows, might not be necessary, even though the inference between them is necessary; and vice-versa.

[237] *As to the second*: what is stated in [the hypothetical premise of a hypothetical] syllogism is that the consequent is implied by the antecedent. That is not the same positing [the consequent], which is in the conclusion; nor does [the consequent] follow from [the hypothetical premise just by itself].

Response to the third: in some cases it can be ruled out that the examples given are syllogisms. For a statement is only a syllogism if something is deduced from it, and what is mentioned in the [third] objection is not like that. Then it can be ruled out that what is sought in one of the premises is the same as that sought in another, because the word "but (*lakin*)" and the particle "*fa-*" [i.e. "therefore"] imply some difference; if these were not included, or there were no connection to signify the conjunction and link between one premise and the other, nothing would follow [from them]. In disjunctive [propositions] there is an additional solution available, namely that what follows is "It is not the case that motion does not exist," which is distinct from "Motion exists," which was one of the premises. [...]

[238.3] *The solution to the fourth question* is obvious, because the mentioned propositions do not yield the conclusions that follow from them insofar as they are statements, but by means of other premises that are omitted at the level of utterances but implicitly affirmed at the level of the intellect.

[T25] Al-Khūnajī, *Kashf al-Asrār*, 240.6–243.11

[*restatement of al-Rāzī's doubts in T22*]

The Imām [al-Rāzī] mentioned in the *Mulakhkhaṣ* two doubts that would reject the syllogism altogether.

(a) *First*: what ensures the conclusion [of a syllogism] is either (a1) the items of knowledge taken together, or (a2) each of them singly, or (a3) only some of them. (a1) The first is false, because it is impossible that they all exist together in the mind at the same time, for when we know something we must turn our minds towards an object of knowledge, so that it is impossible for us that the mind turns to another object of knowledge at this very time; but so long as [the premises] are not together at all, there is no cause for the existence of the conclusion. For the items of knowledge will be together in order only while thinking it over (*fikr*) and thinking about something is incompatible with knowledge of it, so that the two do not happen together. Also, the existence of the cause must be at the same time as the existence of the effect. For if none of [the premises] individually necessitates [the conclusion], and [241] nothing additional arises once they are taken together, it is impossible that [the conclusion] be necessitated once they are taken together. If, on the other hand, some [additional thing] does arise, the argument reverts to [the question of] what is required for *that*, and a regress follows. (a2) The second option is false

too; otherwise two independent causes would together give rise to [a single] effect; also, because the necessary knowledge would arise even when one of the premises that independently [necessitate] the conclusion is missing. (a3) The third option is false for the same reason, and because adducing something not necessary [for the conclusion] would be superfluous.

(b) *Second*: (b1) if knowledge of the conclusion necessarily requires knowledge of the premises, and knowledge of the premises is necessary, everyone must have [knowledge of the conclusion], because what necessarily follows from the necessary is [itself] necessary. Thus every [person] will share in [knowledge of the conclusion]. (b2) If on the other hand the inference, or the knowledge of the premises, are a matter of inquiry, or if at least one of them is, then the same argument applies again, yielding a regress. Or else it stops at necessary [premises], in which case the consequence [of (b1)] recurs.

[***reaction to al-Rāzī's responses in T23***]

(a) [*Al-Rāzī's*] *reply to the first*: [a conclusion] does requires that the items of knowledge be taken together; but they are together as soon as we find ourselves to have knowledge of things in our souls at the same time. To his saying, "one thinks something over while pursuing knowledge of it" we respond: those items of knowledge are but the thought of their arising in a specific order, and considered as such, they do not necessitate a conclusion. Rather, they do so in consideration of their true realities.

But this calls for further inquiry. For these very items of knowledge, by their true realities, only necessitate knowledge of the conclusion when they are ordered in a specific way, as has been stated several times. But he explained "thinking" in terms of these items of knowledge being put in order. So it is not right for him to say that they do not necessitate knowledge when considered as such.

The truth is that "thinking" is just the intention [242] of moving from those items of knowledge, and by means of them reaching the intended [conclusion], or whatever gives rise to this intention; or the very arrangement of these items of knowledge as a means [to this end]. So the necessitating element would be the ordered items of knowledge, which are doubtless different from the thinking process, on any of these three interpretations.

[Quotation from al-Rāzī:] "As for his saying that either [the conclusion] occurs once these items of knowledge are together, as something that had not yet occurred when they were separate, or this is not the case, we reply that doubt-

less a form (*hay'a*) of togetherness does occur for them, but in such a way that you [first] understand their having occurred, and then they make you understand the conclusion."

This is a comprehensive critique [of the syllogism as such]. Verification lies in blocking [the argument] by uncovering the false premise. *We do this by saying*: when [the items of knowledge] come together, something does arise that was not there when they were separate, and necessarily so. There is no need to belabor the necessity that their being together arises, once they are brought together, or that this is different from each one of the parts, and was not yet existent when they were separate.

He said: the necessitating element for that is either each of the parts, or some of them, or their totality. *We say*: these are not the only options. Rather, the reasons could be external, because [the syllogism] taken together is compounded from two things whose complete cause is those two parts, these being the material cause, plus an efficient cause which is external, with the upshot that neither of the parts is independent of the other in necessitating [the conclusion]. We say this because nothing here is independently [necessitating] apart from [the syllogism] taken together, since an external cause ensures the togetherness of its parts.

(b) [*Al-Rāzī's*] *reply to the second*: the inquiry only concerns those primary items of knowledge [insofar as they are] arranged in a temporal succession. If distinct causes in the mind ensure their occurrence, then the occurrence of knowledge by inquiry is not impossible; otherwise it is.

[243] *Verification of this reply*: we do not concede that if the knowledge of the two premises is necessary, and likewise the fact that the intended conclusion follows from them, then knowledge by inquiry occurs for each of them. For what it means for each of the premises to be necessary is that, if we conceive of their terms and of the nexus (*nisba*) of their predicates to their subjects, we know that this nexus is necessary. What it means for it to be necessary that the conclusion follows is that, if we conceive of the two premises and the intended [conclusion] and the relation (*nisba*) of the intended [conclusion] to the two [premises], the former is known to follow from the latter. Someone might conceive each of the terms in both premises and the terms of the intended [conclusion], without conceiving the premises and intended [conclusion], because the occurrence of that depends on external causes, which themselves may occur or fail to occur. When [the objector] says, "what necessarily follows

from the necessary is [itself] necessary," this is wrong, because all matters of inquiry are like that. The necessary [proposition] is one such that the conception of its two terms suffices to assent to it, whereas the fact that something necessarily follows from something necessary does not suffice for assenting to it; an intermediary necessity, from which this follows, is needed. So it is not necessary [knowledge], but [knowledge] by inquiry.

[T26] Al-Khūnajī, *Kashf al-Asrār*, 247.12–248.9

[*defense of the fourth figure*]

Some have omitted the [fourth] figure from this classification, and made the figures only three, *because they said*: the middle term is either a predicate in both premises or a subject in both, or else a predicate in one of them and a subject in the other, the latter being the first figure. Then, when they mentioned the first figure, they mentioned it as being more specific than this, in that the middle term in it is a predicate in the *minor* premise and a subject in the *major* premise. On this basis they proclaimed its perfection, under the condition that the minor premise be affirmative and the major premise universally quantified. But if the first figure is explained in its more general meaning, then none of these features holds true. Hence, they were forced either to maintain a defective classification [of syllogistic figures] or to a false explanation of the first figure, as just mentioned.

As for [248] the excellent al-Fārābī and the Master [Avicenna], they abandoned [the fourth figure]—after affirming its place in the classification—because it is remote from nature, difficult to reduce to the first figure (as this requires applying changes to all its premises), and unsuitable for the habits of theoretical inquiry and deliberation. And finally, because it is not needed, given the other three figures. *The Master* [*Avicenna*] *said*: therefore, it is most appropriate for it, in its own right and for the relevant positions (*bi-hi wa bi-mā huwa fī madhhabihi*), that it be abandoned.[8] We, however, follow the later logicians in what they have said, since the logician investigates everything by whose means it is possible to reach something [as yet] unknown from what is already known, and [investigates] how one is to order what leads to this, regardless whether it is an ordering reached by means of another ordering, or not—whatever it may be. If one certain arrangement was made superfluous by another, that would

8 Avicenna, *Shifāʾ: Qiyās*, 111.

mean that the second and the third figure should also be abandoned. The usefulness ascribed to the other two figures is present for the fourth figure as well, as will be shown.

[T27] Al-Abharī, *Īsāghūjī*, 21.1–25.15 [trans. Salem, mod.]

[*definition and terminology*]

The syllogism is a statement composed of [sub-]statements such that, if these are accepted, then this all on its own leads to another statement. It can be a combinatorial syllogism, as when we say "Every body is composed (*mu'allaf*); everything composed is created; therefore, every body is created." Alternatively, it can be a reiterative syllogism, as when we say "If the sun is up, then it is day; but, it is not daytime; therefore, the sun is not up."

What is repeated between the two premises of the syllogism is referred to as the "middle term." The subject of the conclusion is referred to as the minor term and its predicate is the major term. The premise that contains the minor term is referred to as the minor premise and the one that contains the major term is known as the major premise. The structural composition (*hay'a al-ta'līf*) of the major and minor premises of the syllogism is called a figure.

[*figures of the syllogism: preference for the first figure*]

There are four figures. If the middle term is the predicate in the minor premise and the subject in the major premise, then it is the first figure. If it is the other way around, then it is the fourth figure. If the middle term is the subject in both premises, then it is the third figure. If the middle term is the predicate in both premises, then it is the second figure. These are the four figures mentioned in logic.

The fourth figure is exceedingly distant from what is natural. No one with a sound mind and a steady disposition needs to reduce the second figure to the first figure. The second figure is derived when there is a contradiction between the two premises, whether by affirmation or negation. The first figure is the one that has been laid down as the standard (*miʿyār*) for the sciences. We present it here as a paradigm, and from it derive what is sought.

[*moods of the syllogism*]

There are four productive moods. *First*: as when we say, "Every body is composed; everything composed is created; therefore, every body is created."

Second: as when we say, "Every body is composed; nothing composed is eternal; therefore, no body is eternal." *Third*: as when we say, "Some bodies are composed; everything composed is created; therefore, some bodies are created." *Fourth*: as when we say, "Some bodies are composed; nothing composed is eternal; therefore, some bodies are not eternal."

[***two types of syllogism***]

Combinatorial syllogisms may be composed (*murakkab*) from (a) two categorical propositions, as happened [in the examples just given]; or (b) two conjunctive propositions, as when we say, "If the sun is up, then it is day; whenever it is daytime, the earth is illuminated; therefore, if the sun is up, the earth is illuminated"; or (c) two disjunctive propositions, as when we say, "Every whole number is either even or odd; every even number is either the double of an even number or the double of an odd number; therefore, every number is either odd, or the double of an even number, or the double of an odd number"; (d) or a categorical proposition and a conjunctive proposition, as when we say, "As long as this is a human, it is an animal; every animal is a body; therefore, every being that is a human is also a body"; (e) or a categorical proposition and a disjunctive proposition, as when we say, "Every number is either even or odd; and every even number is divisible into two equals; therefore, every number is either odd, or can be divided into two equals"; (f) or a conjunctive proposition and disjunctive proposition, as when we say, "As long as this is a human, it is an animal; every animal is either white or black; therefore, as long as this is a human, it is either white or black."

[T28] Al-Abharī, *Tanzīl*, quoted from al-Ṭūsī, *Taʿdīl*, 201.4–204.1

[***some doubts about the definition of "syllogism" dispersed***]

When we said that [the syllogism produces the conclusion] "all on its own," we were guarding against two things.

First, [to ensure] that for the intended [conclusion] to follow, there is no need to bring in anything beyond the premises of the composite statement.[9] [...]

9 Al-Abharī illustrates with the example about A being equal to B, for which see al-Sāwī in [T12].

[202.3] Second, [to ensure] that the conclusion be not by means of an [additional] premise that follows from some of the premises.[10] [...]

[202.20] *Someone might say*: if it is a condition of the syllogism that the intended [conclusion] does not follow by means of some other premise, which itself follows some of the premises that were mentioned, then composites from which the intended [conclusion] follows by means of the converse do not fall under [the definition of] syllogism.

We say: the meaning of saying "what follows does not do so by means of what follows from some of the premises," is [203] that it is not by means of something that follows from them insofar as one changes their parts from the parts of the original premises. But in the case of the converse, its parts are not different from the original parts of the premises; unlike in the case of the contraposition, for here its predicate and subject are different from the predicate and subject of the original premise. [Cf [T21].]

[203.13] *Someone might say*: if what you have mentioned is a condition for the syllogism, it follows that "whenever A is B, every C is D, and every D is H" is not a syllogism productive of the conclusion "either A is not B, or every C is H." For the first part of the disjunction is different from the first part of the connective [premise].

We say: what was meant by "original parts" are the simple [elements] which remain after the analysis of the premises, I mean the predicates and subjects. [...]

[204.1] If the syllogism is composed of two premises only, it is called simple; if not, [it is called] composite.

[T29] Al-Ṭūsī, *Taʿdīl*, 203.4–11

[***commentary on T28: critique of Abharī's comments on implied premises***]

This response [by al-Abharī] is not correct, if one takes the objection in the right way. The correct response would be that the converse is not needed for

10 Al-Abharī illustrates with the example about parts of a substance being substances, for which see al-Sāwī in [T12].

the inference itself; it is needed only in the science of inferences. It is not a condition of the syllogism that the conclusion be *known* to follow without the mediation of any statement apart from the premises. Rather, it would be correct to say that a condition of [the syllogism] is [simply] that the conclusion does [in fact] follow without the mediation of any statement apart from the premises.

The correct [*response*] *is*: it is a condition of the syllogism that the intended [conclusion] does not follow through the mediation of any statement that is not *actually* contained in the premises in actuality, and not *potentially* either. For we do not rule out that a composed [premise] involving a negation that follows from an affirmation may be required for the conclusion; however, we would say that this affirmation has been mentioned, but potentially. When [al-Abharī] says "in the case of the contraposition, its predicate and subject are different from the predicate and subject of the original premise," this is taking it at the level of utterance.

[T30] Al-Ṭūsī, *Taʿdīl*, 204.2–5

[***commentary on T28: the simplicity of the syllogism***]

The syllogism is simple not in consideration of the number of the premises, but of the state of the conclusions: it will be simple if only a single conclusion follows, without first having to produce another conclusion which serves as a premise for that conclusion. It doesn't matter whether there are two premises or more. For a syllogism is composed due to its being composed of [other] syllogisms, not of premises.

[T31] Al-Kātibī, *Munaṣṣaṣ*, Fols. 110^{r}8–110^{v}14

[***commentary on al-Rāzī's solutions to his own doubts in t23***]

[*Al-Rāzī*] *said*: "the response to the first doubt[11] is that what makes the conclusion necessary is those items of knowledge taken together," etc.

I say: the strategy of this response is as follows. [The objector] says under the first option [(a) in T22], regarding the idea that what makes the conclusion

11 Al-Kātibī has just restated the doubts at fol. 110^{r}1–14.

necessary is those items of knowledge taken together, that first of all two items of knowledge cannot exist in the mind [together]. But we say: we do not concede this. He will provide an explanation in [his treatment of] metaphysics, as to how the two can exist together. What he says here is that we judge a hypothetical proposition in terms of whether one proposition follows from the other, or does not. And this can be conceptualized only when both premises are known together. Secondly, [the objector] said: if these ordered items of knowledge necessitate that the knowledge of the conclusion arises, it follows that the thought [process] is linked to the knowledge of the intended [conclusion]. [Al-Rāzī] said in answer that insofar as these items of knowledge are a thought [process] that arises in temporal sequence, they do not necessitate the knowledge of the conclusion. But insofar as they are what they are, that is, with a view to their true realities, they are items of knowledge about the premises, and it is not impossible that these and knowledge of the conclusion be together.

You should know that the strategy of this response is to say: what you mentioned in [your] proof does show that these items of knowledge, insofar as they arise in a temporal sequence, do not, considered in that light, necessitate the existence of the knowledge of the conclusion. We then say that this is not what "necessitating it" means. They "necessitate it" only when considering their true realities. [...]

[110^{r}22] *But this calls for further inquiry*. For if it were like this, it would obviously be false, since in respect of their true realities, these items of knowledge do not necessitate the knowledge of the conclusion, so long as they are not ordered in a specific way (as will be made clear to you later). The Imām [al-Rāzī] interprets "thought" as either these ordered items of knowledge, or the ordering itself of these items of knowledge. But how could this be? Given that thought is involved in the inference (*istilzām*) from these items of knowledge to the conclusion. If it is as [al-Rāzī claims], then there will follow what we said [in the objection, step (a2)]: that the thought of something will come together with the arising of the knowledge of that thing.

The correct solution is to say: we do not concede the truth of what you said about hypothetical propositions. [Al-Rāzī] said in his explanation of them that "thought" comes down to these ordered items of knowledge. *We say*: we do not concede this. Rather, in our view, "thought" comes down to the intention to make a transition (*qaṣd al-intiqāl*) from these items of knowledge, by means of which one is led, to the intended [conclusion]; and whatever follows from this aim. If this is the case, then what you [sc. the objector] mentioned does

not follow, on the assumption that these ordered items of knowledge are what necessitates the existence of the conclusion.

And [the objector] said, thirdly [in step (a3)], that these items of knowledge may arise differently when they do so together or individually. In his answer [al-Rāzī] said, "doubtless a form of togetherness does occur, but in such a way that you [first] understand their having occurred, and then they make you understand the conclusion."

You should know: this was a general criticism. His intended strategy is to say: if you were right in what you said about the premises arising together, it would follow that no form of togetherness occurs when these items of knowledge are actually together. The consequent is obviously false, so the antecedent likewise. *The verification of the answer is simply*: rule this out, and reveal the false premise. This is done by taking the first alternative [i.e. (a3a)], which was that when they come together, something does occur that was not there when they were present individually, and this is indeed how things must be. [The objector] said that what is required for that is a change, either of each of them individually or of both together. But we say: we do not concede that this is an exhaustive set of options. Rather, [it might also be] their being together, together with some external causes. If the composition is a complete cause, the material cause and something external requires that the parts be brought together, which is the efficient cause.

[*Al-Rāzī*] *said*: "As for the second doubt, the response to it is that inquiry only concerns those primary items of knowledge [insofar as they are] arranged in a temporal succession. If distinct causes in the mind ensure their occurrence, then the occurrence of inquiry is not impossible; otherwise it is."

I say: the strategy of this response is to say, we do not concede that if the knowledge of the conclusion necessarily follows from knowledge of the two premises, then the knowledge of the premises is also like that. For each of them, there must be items knowledge reached through inquiry. For what is meant by "following necessarily" is that, when we conceptualize two premises, the conclusion, and the relation (*nisba*) of the conclusion to the [premises], the mind is sure that the conclusion follows from the premises. What is meant by the premises being necessary is that, when we conceptualize their terms and the nexus (*nisba*) of the predicate to the subject in them, the mind is sure that this nexus is necessary. This being so, it could be that someone fails to conceptualize each of the terms in the premises and the nexus of the predicate to the subject

in them, and so does not conceptualize the premises and the conclusion either. For these are distinct causes, and these causes may occur or fail to occur.

[Al-Rāzī] is wrong to say that what necessarily follows from something necessary is itself necessary. For the necessary is that whose terms, on their own, suffice for assent. Whereas what follows from the necessary is not itself necessary, but rather a matter of inquiry.

[T32] Al-Urmawī, *Maṭāliʿ*, 64.15–65.13

[*definition of syllogism*]

[A syllogism] is a statement made up of propositions such that when they are accepted, another statement follows from it just by itself. In "follows from it," by "it" we mean the statement made up [of propositions]. And by "just by itself" we mean that it does not follow by means of a further premise or an implicit premise.

[*additional and implied premises*]

[An example] of the first [needing another premise] is this. When we say "A is equal to B; B is equal to J," from this it follows that "A is equal to J," by means of the [additional premise] "everything that is equal to B is equal to everything to which B is equal." When we say [65] "B is equal to J," this implies "J is equaled by B" and becomes the minor premise for "everything to which B is equal A is equal to as well" which then implies "J is something A is equal to" implying "A is equal to J." Some people made that [additional] premise to be: "what is equal to something equal is equal." But you will notice that with this premise [the syllogism] does not produce a conclusion "by itself," for the middle term is not repeated.

[An example] of the second [needing an implied premise] is this. When we say "Removing part of a substance necessarily removes the substance; the removal of what is not a substance does not necessarily remove the substance," this implies "a part of a substance is a substance" by means of the contraposition, namely "that whose removal necessarily removes the substance is [itself] a substance." This would require a change in the terms of the syllogism, lest it fall outside proof by straight conversion.

By "another statement" we mean: [one that is] distinct from both of the premises. [...]

The syllogism may be intellectual (*maʿqūl*), composed in the intellect in such a way as to leads to assent of another thing; or it may be heard, as we said earlier.

[T33] Al-Urmawī, *Maṭāliʿ*, 66.3–13

[*al-Urmawī responds to al-Rāzī's doubts in T22*]

Response to the first: if what necessitates [the conclusion] is [both items of knowledge] being together, and this has existence in the mind, which [al-Rāzī] calls the "thought," *we say*: no, rather "thought" is the intention to make a transition from those ordered items of knowledge, or what follows from this [intention], or their arrangement, right up to the attainment of the object of inquiry. *As for his saying* [in step (a3a2)], "if, when they are together, something occurs that did not yet occur when they were on their own, the same argument recurs," *we reply*: we do not concede that a regress will follow. Rather it ends in distinct reasons, which are the efficient causes.

Response to the second: we do not concede that everyone shares [knowledge of the conclusion, as inferred in (a1) of the second doubt], if [knowledge of] the two [premises] is necessary. For what it means for a premise to be "necessary" is that when we conceptualize both its terms and ascribe a nexus of one of them to the other, then we have knowledge of this nexus. The meaning "follows necessarily" is that, if we know the two premises and we relate the intended [conclusion] to them, then we know that [the conclusion] follows from the two [premises], even if one of the two sides of the proposition or one of the two premises of the syllogism may not be conceived. *When* [*al-Rāzī*] *says*, "what necessarily follows from something necessary is itself necessary," *we say*: we do not concede this, rather it is reached by inquiry (*naẓarī*).

[T34] Al-Samarqandī, *Qisṭās*, 321.8–323.7

[*answer to al-Rāzī's first doubt in T22, as restated by al-Khūnajī in T25*]

Response to the first: what necessitates [the conclusion] is the [items of knowledge] being together, and that they come together in the mind, because we judge whether the consequent follows from the antecedent, or whether the predicate holds of the subject, and so on, by means of relations, which is impossible without intellectually grasping both relata together. When [al-Khūnajī] says, "for the [items of knowledge] will be together in order only while thinking it over (*fikr*) and thinking about something is incompatible

with knowledge of it," *we say*: we do not concede that their being together in order is thought; rather thought is the *ordering* of this aggregate in order to reach the intended conclusion. When [al-Khūnajī] says, "when they come together, if something occurs that was not there before, then what necessitates that is either each of the [premises], or some, or all together," *we say*: when they come together, a form of togetherness necessarily arises, which is different from each of the parts and which does not exist while they are [still] separate. What necessitates this is something external, namely the intellectual faculty, just as in the other composites, because the efficient cause is not part of the effect. [...]

[***answer to al-Rāzī's second doubt, cf. T33***]

[323] *Response to the second*: if what is meant by "necessary" is its general meaning, then we do not concede that every [person] would share in [this necessary knowledge]. For in this case, the meaning of the premises being "necessary" is that if their terms and the nexus of one of them to the other are conceptualized, then it is known that this nexus obtains. The meaning of "following necessarily" is that if the two premises are conceptualized together with the intended [conclusion], and the relation of the intended [conclusion] to them, it is known that it follows from them. Whenever these conceptualizations are not taking place, the arising of the intended [conclusion] does not follow, so it will not follow that all [people] share it. If on the other hand what is meant by "necessary" is the specific meaning, then we do not concede that a regress follows, because it may end with something that is necessary in the general sense. But God knows best.

[T35] Al-Ḥillī, *Marāṣid*, 238.5–239.12

[***objections drawn from Avicenna in T3 and al-Rāzī in T22***]

Several objections have been leveled [against the definition of the syllogism].

(a) In "One who walks about by night is a thief" or "When the sun is up, it is day" a single premise produces a conclusion, so there is no need for several premises in a syllogism.

(b) You say "Every J is B; every B is B," and conclude "every J is B," but that is the same as the minor premise. Or you say "Every J is J; every J is B" and conclude "every J is B," which is the same as the major premise. So it is a syllogism from which no "other statement" follows. Likewise, you may say: "If there is movement, then there is movement; but in fact, there is movement; therefore, there

is movement" and "Either there is movement or not; but in fact, there is movement; therefore, there is movement."

(c) If in a reiterative syllogism what is reiterated is the same as the premise, what follows [i.e. the conclusion] is the same as the consequent [of the hypothetical premise]. So this [too] is a syllogism from which no other statement follows.

(d) What is required for the conclusion is not that the premises be together, because this cannot exist in the mind. We find in our souls that when we turn with our minds to seeking an object of knowledge, it is impossible for us to turn our attention to [239] another item of knowledge at the same time. And what has no existence in its own right cannot possibly be the cause for the existence of something else, because it is the existence of the cause that necessitates the effect's occurrence. Now if it is the thought, which comes down to these ordered items of knowledge, that necessitates the existence of the conclusion, then it would follow that knowledge of the object of inquiry would occur as soon as the thought does. But this is false, because we know for sure that, when we are in the state of thinking, we are not yet knowing. Also, because thinking is seeking [new knowledge], and seeking what has [already] occurred would be absurd. And, because if these items of knowledge are not each the cause for the conclusion singly, but when they come together nothing additional occurs, either by something happening that had not been there before, or because something ceases, then no cause for the conclusion occurs. But if something [new] does occur, we direct the argument to the cause of this occurrence. What ensures [the conclusion] is not all of the premises taken singly: we know necessarily that this option must be discarded, and besides we would have an aggregate of several causes for a single effect [i.e. there would be overdetermination]. Nor is what ensures [the conclusion] just one [of the premises], for the first reason [i.e. it is obviously false] and because neither [premise] would have precedence [over the other, i.e. neither has a better claim to be the cause].

(e) If knowledge of the conclusion necessarily presupposes knowledge of the premises, then so long as knowledge of [the premises] is necessary, that would imply that [all] intellects would share in [the knowledge of the conclusion]. Alternatively, if knowledge of the implication or the premises (or just one of them) is a matter of inquiry, then a regress follows. Or else the regress ends with a necessary [premise] and the difficulty returns.

[T36] Al-Ḥillī, *Marāṣid*, 239.13–242.3

[***replies to doubts about the syllogism***]

Response to (*a*): in each of the examples there are two premises producing the conclusion, but one of them is implicit: either because it is known, or because there is something indicating it. So when we say "Someone walking about by night is a thief," the major premise is implied because it is obvious: "everyone who walks about by night is a thief." And when we say "When the sun is up, it is day," the other premise is implied [240] because the utterance "when," once connected, indicates the presence of the [other] premise.

Response to (*b*): in "Every B is B" the subject and predicate are the same, so nothing is [really] made subject or made predicate, so there is no premise and no syllogism—except on the level of utterances, which are however nonsensical. If one takes it to be a syllogism, the inference from it is likewise nonsense, albeit that [the conclusion] is true. But if [the nonsensical premise] is altered, the objection disappears.

Response to (*c*): when the consequent that is part of a conditional proposition is reiterated, its status (*ḥāl*) changes: for first it is not a complete statement, and does not bear truth or falsehood, unlike in its second [appearance as the conclusion].

Response to (*d*): what produces the conclusion is [indeed] the two premises being together, and we do not concede that their being together in the mind is impossible. For we find in our souls that we know many items of knowledge at the same time, and know the implications between the propositions. And this is possible only once there is knowledge of the two at the same time. When [the objector] says that thought does not constitute knowledge, because thought [still] seeks [that knowledge], and thought is the premises being together, *we reply*: if thought is made out to be the same thing as seeking [knowledge], then it is wrong to make it come down to the premises' being together. Alternatively, if it is made out to be the same as the premises, then can it be together with knowledge. As for his saying that one of [the premises] is not a cause [separately], so neither are they when taken together, [241] *we reply*: this is ruled out, in the sense that when we understand the attribute of "togetherness" to occur [for the premises], we [also] understand them to have causal efficacy (*wujūd al-ʿilliyya*) [to produce the conclusion]. It might be said that this could occur as something additional. As to his saying that what necessitates [the conclusion] is either each of the parts [of the syllogism] or some of them, or all of

them together, *we reply*: we deny that the set of options is exclusive, because there could also be reliance (*isnād*) on something external. What is composed from two things may well have as its complete cause these two parts as the material cause, plus an efficient cause which is external. The upshot will be that neither of the parts is independently responsible for causing [the conclusion]. Our reason for saying this is that [the syllogism] taken together is independently [able to produce the conclusion] only when an external cause ensures that its parts are together.

But this argument [sc. the response just given to objection (d)] is extremely weak, because the questioner [who posed objection (d)] denied that the premises' being together is a complete cause, and this argument [in response] admits his claim. For the additional thing that occurs when [the premises] are together, just insofar as they are together, is a cause. Then [the response] makes *that* additional thing reliant on something external; therefore something external is involved in reaching the conclusion. The conclusion is thus not exclusively reliant on [the premises] being together, but also on something external. So the problem reappears.

[242] [*Response*] *to* (*e*): necessary [items of knowledge] must indeed be shared. With respect to those that rely on the bodily faculties, this is obvious. With respect to those that are immediate (*badīhiyyāt*), it may be that [this sharing] ought to occur, but then either the sound natural disposition is contaminated, preventing the intellect from judging [as it should], or some kind of defect befalls the intellectual faculty.

[T37] Al-Ḥillī, *Marāṣid*, 119.5–10

[***reiterative and combinatorial syllogisms***]

Secret: when a syllogism somehow contains the sought [conclusion] or its contrary, it is called reiterative, like "Whenever A is B, J is D; but A is B; therefore, J is D" or "[Whenever A is B, J is D; but] J is not D; therefore, A is not B." If by contrast [the conclusion] is not contained [in the syllogism], it is called combinatorial, like "Every J is B, and every B is A" and "Whenever A is B, then J is D; and whenever J is D, then H is R." The earlier logicians assimilated the combinatorial syllogism to the categorical, and the reiterative to the hypothetical. They did not realize that combinatorial syllogisms may [also be] hypothetical. The Master [Avicenna] explained this [cf. T7].

[T38] Al-Ḥillī, *Asrār*, 119.12–120.9

[*the four figures of the syllogism*]

Secret: the combinatorial syllogism is composed of two premises. One contains the subject of the conclusion or similar: it is called the minor premise. The other contains the predicate of the conclusion or similar: it is called the major premise. For example "Every human is an animal, and every animal is a body." "Human" is the minor because of its specification, while "body" is the major, because of its generality; "animal" is the middle. [...]

[120] All three of them are called by the name "term." What is sought is called the "conclusion," the composition of premises "combination," the form in which they are composed "figure," and that which produces the conclusion "syllogism."

The figures are four, because if the middle term is a predicate in the minor premise and a subject in the major premise, then this is the first figure. This is the clearest and noblest of all the figures, because it is productive in the universal affirmative and all four quantifications. If it is the other way around, then this is the fourth figure, but the ancients omitted it because it is so remote from nature. And if [the middle term] is a predicate in both premises, then this is the second [figure], and this one follows the first [figure] in that it is productive in the universal and in that it is used in the sciences. If the [middle term] is the subject in both [premises], then it is the third [figure].

CHAPTER 10

Modal Syllogistic

We are now ready to turn to *modal* logic, which as its name implies, studies logical relations between propositions with attention to the *manner* or *mode* (in Arabic *jiha*) in which the predicate is ascribed to the subject in propositions. Most obviously we have the contrast between something's being asserted as merely possible, and its being asserted as necessary—a central contrast for Avicennan logic, since what we are working towards is a theory of demonstrative science that admits only necessarily true propositions. Having observed this distinction, Aristotle already began to explore the question of how modalized propositions fit together to form valid arguments. To take just the most obvious example, two merely possible premises yield a merely possible conclusion, whereas two necessary premises yield a necessary conclusion. Avicenna carries on, and greatly expands, this project.[1] One fundamental innovation is his claim that *all* propositions are at least implicitly modalized. If the mode is not explicitly mentioned, a proposition expresses that the predicate belongs to the subject at least once. He calls such propositions "absolute (*muṭlaq*)" [T1]. And if we say "two is even" without adding further qualification, we have expressed a necessarily true proposition, even though the necessity is not made explicit. The upshot is that in a sense there is no such thing for Avicenna as "non-modal" logic, because there are no syllogisms whose premises and conclusion lack a modal operator, though it may seem otherwise when this is left tacit.

Furthermore, for Avicenna there are more modes than just necessity, possibility, and impossibility. In the Aristotelian tradition a close connection had been seen between something's being *always* the case and its being *necessary*. Aristotle argues that these are mutually entailing in the famous chapter 1.12 of *On the Heavens*. And obviously something *impossible* is *never* the case. That seems to leave *merely possible* or *contingent* true propositions to reflect state

1 For an overview see R. Strobino and P. Thom, "The Logic of Modality," in C. Dutilh-Novaes and S. Read (eds), *The Cambridge Companion to Medieval Logic* (Cambridge: 2016), 342–369; a detailed presentation of Avicenna's modal syllogistic is R. Strobino, "Ibn Sina's Logic," in E.N. Zalta (ed), *The Stanford Encyclopedia of Philosophy*, 2018. See also T. Street, "Medieval and Modern Interpretations of Avicenna's Modal Syllogistic," in F. Opwis & D.C Reisman (eds), *Islamic Philosophy, Science, Culture, and Religion: Essays in Honor of Dimitri Gutas* (Leiden: 2012), 232–256.

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of affairs that are true *sometimes*, since if they were never true they would be impossibility propositions, if always true, then necessity propositions. Scholars refer to this as a "statistical" interpretation of modality.[2] Avicenna by contrast sharply distinguishes between what we can call "temporal" and "alethic" modes:

Temporal	**Alethic**
Never	*Impossible*
Sometimes	*Contingent* (= two-sided or "special" possible [T2])[3]
Always	*Necessary*

The real payoff here comes in the second line: it allows Avicenna to consider propositions that *might* be true but as it happens never are *in fact* true. For example, "Avicenna is in Florida" is not impossible, as some exceedingly unlikely sequence of events might have brought him there. But it never happened. So it would fall into the first line under the heading of "temporal" propositions. The upshot is greatly to increase the number of syllogistic forms that need to be considered in modal logic, since now we have to think about what happens when we, say, have a perpetuity premise (one that is always true) in combination with a two-sided possibility premise: what mode or modes would apply to the conclusion?

Nor do the complications end there. Avicenna also distinguishes between substantial (*dhātī*) and descriptional (*waṣfī*) readings of a proposition. For example "body is extended" is true substantially, as "extended" is true of body as long as it exists. But "body is changing place when moving" is true descriptionally, since it holds true for body only insofar as motion belongs to it. Yet again, therefore, we can expand the total number of possible combinations that yield candidate syllogisms. To take the same example just given, when we ask what happens when one premise is perpetual and the other two-sided possible, in

2 On this see e.g. J. Hintikka, *Time and Necessity* (Oxford: 1973).

3 A quick explanation is in order here: in both Arabic and English the word "possible (*mumkin*)" is ambiguous. It can mean either "not impossible," in which case it includes both the contingent and necessary, or "contingent," in which case it excludes the necessary as well as the impossible. In English we capture this by calling the first sense "one-sided possibility," the second sense "two sided-possibility"; in Arabic the distinction was called "general (ʿāmm)" vs. "special (khāṣṣ)" possible.

theory at least we need to work out the answer for the case where both premises are true substantively, where both are true descriptionally, and in the two cases where the premises differ in this regard.

In the course of the tradition even compound modal propositions developed. For example, one could say: "At least once: every human is P, but not necessarily." (The Arabic terminology for all these different modality propositions is not intuitive; for an explanation see [T21] and T. Street, *Najm al-Dīn al-Kātibī's al-Risāla al-Shamsiyyah* (New York: 2024), Appendix 1 & 2). The total number of modality propositions thus multiplied, on al-Ṭūsī's count, to 217. But al-Rāzī, based on Avicenna's distinctions and his own, narrowed them down to 13 pertinent types that became standardly considered. This is the figure given in [T21] and [T31], sometimes 15 are distinguished; [T21] is a good place to start since there al-Kātibī explains each of the types. But that's without even getting into the fact that these distinctions are iterated for all the Aristotelian moods (on al-Ḥillī's count [T31], for each of the four syllogistic figures 169 moods can be formed). You will be glad to know that we don't need to go through all possible combinations, though. For one thing, there was a tendency to formulate general rules that cover many cases all at once, something we can already observe with Avicenna's student Bahmanyār [T4].

For another thing, the debate over modal logic focused above all on one central problem. Obviously if the premises have the same mode, the conclusion is going to share that mode. So the combinations under dispute were always "mixed" modal syllogisms, that is, syllogisms with premises of differing modality. What our logicians want to know is, which of these syllogisms are "productive," that is, validly yield a conclusion, and what mode will the conclusion have? And here, one combination in particular provoked the most controversy: that of a necessity major premise with a possibility minor premise.

It is with good reason that this case dominates discussions of modal logic in our period. The other mixed combination—possibility majors and necessity minors—were standardly seen as perfect syllogisms producing a possibility conclusion, without needing a proof. They were seen as instances of *dictum de omni*, that is, straightforwardly valid because everything that is universally true of a class is true of any subclass (see [T4]). The major premise plays a special role in a modal syllogism, because it contains the major term that reappears as the predicate in the conclusion. The modality expressed by the major premise is what is said to hold between the major and the middle term. It stands to reason that the same modality should hold between the major and the minor term in the conclusion, if the syllogism is valid.

However, the matter is different with necessity majors and possibility minors: According to the above rationale, Aristotle and Avicenna held that they

produce necessity conclusions [T3], but for that you need to assume that the possibility in the minor premise is actualized.[4] Whether this is a legitimate move was a vital question, because Avicenna derived other valid inference patterns from this one. So if first figure syllogisms with possibility minors are not productive, the entire deductive system is in danger. Bahmanyār provides an example of the relevant sort of syllogism in [T4]:

> Possibility minor premise: every human can possibly move
> Necessity major premise: whatever moves is necessarily a body
> Therefore: every human is necessarily a body

Now, this may look strange. How can we infer that something is necessarily the case on the strength of something that is only possibly the case? But as the example shows, at least some inferences of this form are actually rather intuitive. If humans are just a sort of thing that *can* move, and anything that *in fact* moves is a body, then surely humans are bodies. The debate in post-Avicennan philosophy becomes quite technical, but fundamentally it boils down to a contest between these two intuitions.

As seen in early engagements with the question, like [T5] and [T8], a rule of thumb is that the modality of the conclusion follows that of the major premise (that is, the premise in which the predicate term of the conclusion appears). In other words, so long as this premise is necessary, so is the conclusion. In [T5] al-Sāwī says that the conclusion will be necessary even if the major premise is absolute, that is, not explicitly modalized. In [T6] he considers an exception, where the major premise "J is D" is applied to subjects that are not always J. For instance if humans who are asleep have closed eyes, and those with closed eyes necessarily cannot see, this doesn't imply that humans cannot see, since humans are sometimes not asleep.

A significant breakthrough then comes with al-Rāzī, who introduces the distinction between essentialist (*ḥaqīqī*) and externalist (*khārijī*) readings of the subject term [T9], a distinction we have mentioned in the introduction to this volume. As al-Rāzī puts it, the idea is that if the subject term were to be realized externally, then the predicate would apply to it. Now, al-Rāzī still accepts that mixed syllogisms with possibility minors are productive of necessity conclusions [T10, T11]. But his point about the externalist reading opens the door for al-Khūnajī's rejection of this Avicennan doctrine [T13]: if all As are only *pos-*

4 For a philosophical discussion of this strategy, see M. Malink and J. Rosen, "Proof by Assumption of the Possible in 'Prior Analytics' 1.15," *Mind* 122 (2013), 953–986.

sibly Bs then perhaps there is not a single A that is ever a B *in fact*. (A similar worry had already been expressed by al-Suhrawardī [T7].[5]) In effect al-Khūnajī here uses Avicenna's own insight against him: some genuine possibilities are never realized. And we don't want to infer necessary truths from such unrealized possibilities. Hence, for al-Khūnajī, syllogisms with possibility minors are sterile on the externalist reading; on the essentialist reading we simply cannot say whether they are productive or not. A nice example, and explanation, are given by Ibn Wāṣil [T26] in his discussion of al-Khūnajī's view.[6] Notice how stark is the disagreement with Avicenna: whereas he held that these syllogisms produce a *necessity* proposition as their conclusion, al-Khūnajī and those who followed him held that no conclusion *at all* validly follows from them, not even a possibility proposition.

Among those who agreed was al-Abharī, who likewise outright denies the productivity of syllogisms with possibility minors [T14, T15, T17]. He extends the point to second and third figure syllogisms [T16, T18]. This solicited a spirited defense of the Avicennan position from al-Ṭūsī [T19, T20], as we would expect from him (for a response see al-Ḥillī at [T30]). But more generally it seems that most logicians after al-Khūnajī at least put constraints on the productivity of these syllogisms. Thus al-Kātibī, in his very influential logical textbook *al-Risāla al-Shamsiyya*, stipulates that the conclusion will follow the modality of the major, but only if the possibility mentioned in the minor premise is at some point actual [T22, T23, T24]. An interesting additional point made in [T24] is his response to an attempt to save the Avicennan view by saying that the subject term in a possibility minor falls within the scope of the predicate term, whether or not the predicate ever actually applies to the subject. To use Bahmanyār's example again: humans are just by nature among the things that move, and this is true even if in fact no human ever moved. So the idea here is to push the intuition in favor of Avicenna's rule by appealing to class inclusion. But al-Kātibī disagrees. For him, if humans never *in fact* moved, they would not fall within the relevant class of moving things, so their capacity for motion would not show that they must be bodies.

Alongside al-Rāzī, who is prominent as a defender of the productivity of syllogisms with possibility minors, and al-Khūnajī, who is the most influential opponent of this view, another figure who was cited frequently in the

5 On Suhrawārdī's modal syllogistic, see T. Street, "Suhrawardī on Modal Syllogisms," in A. Akasoy & W. Raven (eds): *Islamic Thought in the Middle Ages* (Leiden: 2008), 163–178.

6 See also the introduction to *al-Khūnajī, A. Kashf al-asrār ʿan ghawāmiḍ al-afkār*. Ed. by K. El-Rouayheb (Tehran; Berlin: 2010).

later tradition was al-Kashshī. In his *Ḥadāʾiq* he gives a general rule according to which the conclusion in mixed syllogisms carries the same modality as the major premise, *except* if the minor is necessary and the major a negated perpetual [T12].[7] Then, the conclusion follows the minor premise. Among the authors who refer back to him are al-Urmawī [T25] and al-Samarqandī [T27, T28], both of whom provide overviews of the debate up to their time and follow the anti-Avicennan view of al-Khūnajī. Finally, al-Ḥillī comments on al-Kātibī's *Shamsiyya* and in this context contrasts the new orthodoxy that the minor possibility premise must be actual, to the view of "older scholars" who did not lay down this condition [T29]. Here and at [T31] he mentions a point that makes the actuality requirement seem much less intuitive: how could a conclusion go from being possible to being necessary, just because some other possibility (namely the one articulated in the minor premise) happens to be realized? Using Bahmanyār's example one last time, the modal status of the truth that humans are bodies shouldn't be affected by whether or not humans actually move.

As we can see from all this, logicians spent centuries grappling with the implications of Avicenna's decoupling of possibility from actual occurrence. The course of the debate reveals an underlying, more fundamental disagreement as to the very function of modal syllogisms. Avicenna's idea was that asserting a possibility about something tells us about the nature of that thing, whether or not the possibility is realized; today we might put the point by saying that if X moves in any possible world, then X is a body in every possible world. Al-Khūnajī's idea was different. He seems to have thought of syllogisms as expressing what we can infer from the observed features of things in our actual world, not from mere possibilities. Al-Rāzī's contrast between essential and externalist readings seems to offer the crucial insight here. In the end, whether these syllogisms are productive depends on which reading we adopt for the minor premise: on an essentialist reading that accommodates counterfactuals situations, the premise tells us something about what is true in all possible worlds. On an externalist reading, the premise tells us only about the actual world.

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7 For example:

Always, winged is not said of human

Necessarily, winged is said of flighted animal

Therefore: Necessarily, flighted animal is not said of human

In other words, if a predicate never applies to something and is such that it is necessarily true of something else, the latter is necessarily false of the former.

Texts from: Avicenna, Bahmanyār, al-Sāwī, al-Suhrawardī, Abū al-Barakāt, al-Rāzī, al-Kashshī, al-Khūnajī, al-Abharī, al-Ṭūsī, al-Kātibī, al-Urmawī, Ibn Wāṣil, al-Samarqandī, al-Ḥillī.

[T1] Avicenna, *Ishārāt, Manṭiq*, 88.4–89.12

[*types of necessity: substantial vs descriptional*]

Every proposition is either: (a) a general absolute [proposition], that is, a [proposition] in which a judgment is expressed without thereby expressing its necessity or its perpetuity, or anything else concerning [the judgment's being applicable] at a certain point in time or in the sense of possibility. Or (b) it is [a proposition] in which some of the above [qualifications] are mentioned, be it necessity, perpetuity without necessity, or existence without perpetuity or necessity.

Necessity may be (a) absolute, as in "God exists." Or it may be connected to a condition. The condition may be (b) the duration of a substance's existence, as in "Human is necessarily rational body." By this we do not mean that human is always and will always be a rational body, because this would be false for each individual human. What we mean by it is that *as long as the substance is existent as a human*, it is a rational body. The same goes for every negation that resembles this affirmation. [89] Or the condition may be (c) the duration of the subject's being described by one of its attributes (*mawṣūfan bi-mā wuḍiʿa maʿhu*), as in "All moving things are changing." The meaning here is not [that this is so] absolutely, or as long as the substance (*dhāt*) exists, but [that this is so] *as long as the substance that is moving, is moving*. There is a difference between this (c) and the first condition (b), because the first condition turns on the substance itself (*aṣl al-dhāt*), namely "human," whereas here it turns on the substance being described by an attribute attached to it, namely "moving thing." A moving thing has a substance and an essence to which both movement and rest may attach; "human" and "black" are not like that. Or it may be a condition of [the duration] (d) of the predicate; or (e) of a definite time, as in an eclipse, or (f) of an indefinite time, as in breathing.

Even though necessity on the first condition (a) is not considered to be the absolute necessity that does not turn on any condition, it still shares with it the feature of being either more specific or more general, or of two more specific [necessities] being subsumed under a more general one, if the condition in

the conditioned proposition is that the substance is not always existent. What the [types of necessity] share is what is meant by saying "necessary proposition."

[T2] Avicenna, *Ishārāt, Manṭiq*, 90.11–91.13 [trans. Inati, mod.]

[***one-sided and two-sided possibility***]

By "possibility (*imkān*)" may be meant (a) that which is implied by negating the necessity of nonexistence, that is, impossibility. This is [the meaning of "possible"] according to the sense first laid down. In this sense, whatever is not possible is impossible. This [type of] possibility may be predicated of the necessary [and not just the contingent].

Or by it may be meant (b) that which is implied by negating both necessity of nonexistence and necessity of existence. This is [the meaning of "possible"] according to the sense that has been laid down according to a specific tradition, such that the primary [i.e., this second] type of possibility may be true of something regardless whether that thing is negated or affirmed, so that it is possible that it is, and also possible that it is not. [91] In other words, it is not impossible that it be, and also not impossible that it not be. As possibility in the primary sense is true for both options [i.e., existing or not], it is properly designated by the name "possibility." The necessary does not fall under this kind of possibility, according to which things are either possible, or necessary, or impossible. Whereas what is understood by the first sense (a) is that things are either possible or impossible. "Not possible" in the primary sense, i.e., the second and proper sense, means the same as "not non-necessary." Hence the necessary is not "possible" in this sense. What is possible in this sense includes things that exist, but whose existence does not necessarily endure, even if it is necessary at a certain point in time, like an eclipse.

One may also say "possible" and understand (c) a third sense by it, which is more specific still than the two senses just mentioned. In this sense the judgment is not necessary at all, not at a specific time as with the eclipse, nor in a certain situation as with change for a moving thing. Rather, it is like "writing" [judged to belong to] "human."

There are, then, four notions: (a) necessary (*wājib*), (b) impossible, (c) having a certain necessity (*ḍarūratun mā*), (d) having no necessity at all.

[T3] Avicenna, *Shifāʾ, Manṭiq, Qiyās*, 148.9–17 [trans. Street, mod.]

[***agreement with Aristotle and al-Fārābī on the mixed modal syllogism***]

Know that the Eminent Scholar [al-Fārābī],[8] with whom I am most concerned to conduct my discussion, agrees with what I say. Indeed, the First Teacher [Aristotle] believes that if the necessity major in the first figure is joined to a non-necessity minor, the conclusion is necessary. Let us assume all Js are Bs non-necessarily, and all Bs are As necessarily, and it yields what the Eminent Scholar and the First Teacher both agree on, and what you have learned. But why doesn't one of them go on to say that this is not a necessary proposition, but rather must be: all Bs are As necessarily *insofar as* they are Bs [...]? If this is taken into account, then what the detractors say against those who produce a necessity proposition from these premises turns out to be true. That is because what the detractor is saying in this matter is like what the Eminent Scholar had to say about the conversion of the possible proposition.

[T4] Bahmanyār, *Taḥṣīl*, 136.5–137.5

[***general rules for mixed modal syllogisms in the first figure***]

Concerning the mixed possibility and necessity [syllogisms] in the first figure: if the minor premise is a necessity [proposition] and the major a possibility [proposition], then no doubt the conclusion is a possibility [proposition], because it is a *dictum de omni* (*al-maqūl ʿalā l-kullī*). When the major is a necessity [proposition] then the conclusion must be necessary as well. Let us explain this in a way that is easy to understand.

When we say "every B is necessarily A"—that is, whatever is said to be B, is perpetually A—then if J is said to be B, it is so perpetually, not[9] as long as it is described as being B, but as long as the substance J that is described as being B exists. If some J becomes B, then it was already the case beforehand that B is A, and likewise will still be the case afterward that B is A, after [J] ceases to be B. For example:

8 For the identification of this figure as al-Fārābī see T. Street, "'The Eminent Later Scholar' in Avicenna's *Book of the Syllogism*," *Arabic Sciences and Philosophy* 11 (2001), 205–218.

9 Reading *lā* for *lahu* after *dāʾiman*.

Every human [J] can possibly move [B]
Everything that can move [B] is necessarily a body [A]
Therefore, every human [J] is necessarily a body [A]

Given that every moving thing as long as its substance exists—be it moving or not—is described as being a body, it is true of human insofar as it is a moving thing that it is necessarily a body. That is: as long as its substance is existent, not only insofar as it is [actually] moving, for it is [137] a body before and after it is moving. Not that this [sc. being a body] applies to it [sc. human] only once the latter is moving. For it is not the case that a thing [like a body] acquires a certain property [like moving] only when [the property] exists [i.e. when the body is moving], as this property is applicable even before [the relevant property, i.e. motion] exists; it is thus not the case that if the [property] did not exist, then it would not belong to this [thing].

Likewise, if the major is a negated necessity [proposition], then the conclusion is a negated necessity [proposition as well], as we have explained.

You know now the particular syllogisms among them; the rule for the major premise is that if it is a possibility [proposition] then so is the conclusion, or if it is a necessity proposition, then so is the conclusion.

[T5] Al-Sāwī, *Baṣā'ir*, 151.10–20

[*the modality of the conclusion usually follows the major premise*]

As we have now completed [the treatment of] absolute and necessity syllogisms in these three figures, and also the possibility [syllogisms] in the first and second figure, we should now turn to explaining the mixed modal [syllogism] made up from those. If the major is an absolute and the minor a necessity [proposition] in the first figure, then they agreed that the conclusion is an absolute, following the major premise. If the major is a necessity [proposition] then the truth is that the conclusion is so as well. But the received opinion is different from that. *To explain*: with a necessity conclusion, if we say in the major premise "every J is D"—that is, everything that is described as J, whether it is so described perpetually or not, is described as D by necessity—and B is among the things absolutely described by J, then [B] falls under the major premise, and D is said of it necessarily. Thus in this mixed [syllogism], the conclusion follows [the modality] of the major premise, unless the minor is necessary and the major absolute, in the sense that it is conditional on the substance's being

described in a certain way. Then the conclusion will be necessary, because if B is described by J as long as it exists, and every J is D as long as it is described by J, then B is D, as long as it exists. For the duration of D for it is as long as the duration of J, and J persists for it as long as it exists.

[T6] Al-Sāwī, *Baṣā'ir*, 151.20–152.11

[*"the most eminent of the later logicians" on mixed modal syllogisms*]

The most eminent of the later logicians [sc. Avicenna?] said: it is not appropriate for the major premise to be conditioned by [saying that] J is D as long as it described by J, and not perpetually, for then it becomes false. If we say "every J is D, not perpetually, but only so long as it is J," then we are judging that every J is not always J. But we had said in the minor premise the same of that which is J, that is: B is what is J perpetually, which is absurd. Let us pursue what he said where he rejects conditioning the major premise by non-perpetuity in a sense, even though the syllogism does not produce a conclusion on this condition.

As for his justification of that by the falsity of the major premise, this is not the case generally and on all considerations and perspectives of predication and subjection, for it is possible that non-perpetuity be made a part of the subject. Then one may say, "everything that is not always J is D" and this is not the respect he mentioned. He made non-perpetuity part of the predicate, saying "every J is D not always but as long as it is J." Here, non-perpetuity is part of the predicate and for this reason [152] the major premise is false. If we make the J in the minor premise the predicate of what is described as J always, and here (that is, in the major premise) make the description of every J by J-ness non-perpetual, then since we made the predicate non-perpetual but conditioned on the duration of J-ness, then by necessity J-ness is not perpetual. For if the duration of J-ness were non-existent, then its description as D would be non-perpetual. If one thing is an accompaniment of another that is posited as non-perpetual, then it is itself non-perpetual. As for the perspective from which we made it a part of the subject, in this sense the major premise is not false. For you don't judge of every J that it is described as J, but not always; you make a judgment indicating that what is not always J is among the things described as J. This does not preclude the existence of something that is always described as J. But this J [sc. that which is only temporarily described as J] is not what was predicated in the minor premise. If its predicate is what is *always* J, then the middle term would not allow for a single syllogism of which it could be part, and therefore no conclusion follows. Hence [comes] the point of view accord-

ing to which it is said that it is not necessary that in the major premise there be a condition on the duration of J-ness, because either the major is false, or it is true, but then the syllogism has no minor term.

[T7] Al-Suhrawardī, *Manṭiq al-Talwīḥāt*, 53.7–11 [trans. Street, mod.]

[***an exception to the rule that the modality of the conclusion follows that of the major premise***]

You should know that the conclusion in first-figure syllogisms follows the major premise in the mixed-premise syllogisms, because the major term has greater scope than the minor term with respect to what is judged to hold of the middle term; except when the minor premise is possible and the major is existential (*wujūdiyya*). If we say "possibly every J is B" and "in actual existence (*bi-l-wujūd*) every B is A," it is known from the nature of possibility that it may never actually occur; so if the J is never described as B, it does not follow that A comes to it actually, but only potentially. So it's [merely] possible.

[T8] Abū al-Barakāt, *Muʿtabar*, vol. 1, 148.9–149.5

[***the modality of the conclusion follows the major premise***]

If the propositions are necessary, then their conclusions are likewise necessary in the first and the second figure, as well as in the productive moods [constructed] in them. The sterile moods, as well as the examples and proofs, are the same as those we adduced to specify the generality and specificity of the terms in each of the moods.

With regard to the first figure, this is because the minor term is among [the instances] of the middle term, so the former is [whatever] the latter is. So if the major term is judged to hold *necessarily* of the middle term, then the same goes for [the middle term's] being predicated of the minor term. The predication in the conclusion does not have greater scope than that of the major premise. […]

[***mixed modality extended to the case of existential and mental premises***]

[148.23] In the first figure, [when the premises are merely possible the conclusion is] likewise possible, because when it is possible that the minor term applies to the middle term, and possible that the middle term applies to the major term, [149] then it is [merely] possible that the minor term applies to the major term, regardless whether the possibility is an existential or a men-

tal one. So the conclusion is likewise [possible]. If [the syllogism] is a mix of both [mental and existential possibility premises], then the conclusion is a mental [possibility proposition], not an existential one. If it is of the kind of mental possibility that is necessary in the existential sense (*fī l-wujūd*), then the judgement in the conclusion mixes possibility and necessity. Sometimes it is necessary and sometimes possible—you don't know. But the judgment in it is by way of mental possibility.

[T9] Al-Rāzī, *Manṭiq al-Mulakhkhaṣ*, 140.11–143.3

[***essentialist vs externalist readings of the subject term***]

When we say "Every J," this is sometimes used with reference to a essence (*ḥaqīqa*) and sometimes with reference to external existence (*al-wujūd al-khārijī*). As for the first [sc. the essentialist reading], when we say "Every J" there are five conditions to be considered.

(a) We don't mean by it J as a universal, nor the whole [of the Js] insofar as they are a whole, but we mean each instance of J. [141] The difference between the three concepts just mentioned will be fully explained later on.

(b) We don't mean by it that whose essence is J only, or that which is described as J, but something broader than that, namely that of which it is true to say that it is J. If we meant by "Every J" that whose essence is J, the judgment's scope could not extend from the middle term to the minor term. And if we meant by it that which is described [as J], then no subject would need anything else.

(c) We don't mean by it that which is described with J-ness in the extra-mental world, but something broader than this, namely that of which, if it were to exist in the extramental world, it would be true to say that it is J, regardless of whether it actually exists in the extra-mental world or not. We can say "Every triangle is a shape," even if no triangle exists in the extra-mental world, as meaning that everything that, were it to exist [extra-mentally] and is a triangle, would inevitably be a shape when it existed.

(d) We don't mean by it that which is J always, or not always, but something broader than these two, from which these two [senses] should be distinguished. Namely that, when we say "Every J" and then stop; or when we say "Every J, [142] whether necessary or not, whether always or not," this is [the meaning] it has. These modalities are part of the subject, but they are not absolute or modalized

on that account, but on account of the quality by which the predicates are true of [the subjects].

(e) Al-Fārābī claimed that by saying "Every J" we don't express that J-ness obtains in actual fact (*ḥuṣūl bi-l-fiʿl*), but rather [we express] everything that can possibly be described by J-ness. But this is a linguistic issue. For whoever says "Every J" may mean by it whatever he wants, but language precludes [what al-Fārābī proposed], because "black" does not include any object that is devoid of blackness at all times, even though it would be possible that it have "black" as an attribute.

Having considered these matters, [we may conclude that] "Every J" allows for two readings. First [it may mean]: every J, according to the points mentioned above, in the state of being J. Second [it may mean]: everything of which it is true to say that it is J in actual fact, regardless whether the judgment about it is [considered to apply] now, before, or later. There is a difference between these two notions, because on the first account it is not true to say "Every moving thing is at rest," whereas on the second account it could be true [sc. if every moving thing is at rest at some other time].

As for the second, [the externalist reading]: here what we mean by "Every J" is each of what exists in the extra-mental world in terms of instances of J, or everything that is present among the instances of J. On this account, if no heptagons exist in the extra-mental world, it would not be true to say "Every heptagon is a shape," whereas if no shapes except triangles existed in the extra-mental world, it would be true to say "Every shape is a triangle." Whereas on [143] the first [essentialist] reading, both would be false.

Thus far the discussion of the conditions expressed in the subject of an affirmative proposition; they are expressed in negative propositions in exactly the same way, with no difference.

[T10] Al-Rāzī, *Manṭiq al-Mulakhkhaṣ*, 273.5–274.7

[***the productivity of syllogisms with possibility minors and necessity majors***]

If the minor premise is a possibility [proposition], then the major premise is either necessary, perpetual, non-necessary and non-perpetual, or any [of the above].

In the first case [sc. a possibility minor and necessity major], the conclusion is necessary, because the major premise signifies that whatever the middle term holds true of, in whatever way, also has the major term hold true of it, necessarily and at all times of its existence, both before the middle term occurs, and still thereafter. The minor premise, meanwhile, signifies that the middle term may possibly hold true of the minor term. On the assumption that this possible thing actually occurs, the major term holds true of the minor term necessarily. Everything that is necessarily true when something possible is stipulated as actually occurring is [itself] necessary, regardless whether this possible thing is actually occurring or not. For it is inconceivable that it becomes necessary [only] at the point when the possible thing actually occurs, and that it wasn't necessary already before.

Proof by reductio. Given the syllogism

> Possibly: every J is B
> Necessarily: every B is A

If we say:

> Not necessarily: Every J is A

Then the contraposition [of this] is either "Necessarily: not some J is A" or what amounts to the same thing, by two-sided possibility (*bi-l-imkān al-khāṣṣ*)[10] [i.e. "Possibly but not necessarily: every J is A"].

So adopting the first [version of the contraposition], we then take it with the major premise like this [274]:

> Necessarily: not some J is A
> Necessarily: every B is A
> [to infer] Necessarily: some J is not B

But [by the minor premise of the original syllogism] all [J] is possibly [B], so this is a contradiction.

10 As a reminder: "proper (*khāṣṣ*)" or two-sided possibility means neither necessary nor impossible, cf. [T2] above.

If we adopt the second [version of the contraposition], then we take it together with the minor premise like this:

Possibly: every J is B
Possibly: not some J is A
[to infer] Possibly: not some B is A

But [by the major premise of the original syllogism] all [B] is necessarily [A], so this too is a contradiction.

Let it not be said that this can be disproven with the example

Possibly: every sperm is a human
Necessarily: every human is an animal
Necessarily: every sperm is an animal

For we say: we have clarified that the major premise here is not necessary absolutely, but only conditionally.

[T11] Al-Rāzī, *Manṭiq al-Mulakhkhaṣ*, 274.8–276.12

[***possibility minors with all other types of majors***]

As for the second case, which was that when the major premise is perpetual, the conclusion is inevitably perpetual [too], the same argument (as in T10) can be applied.

As for the third case, which was that when the [minor premise] is neither necessary nor perpetual, then the conclusion is a two-sided possibility, regardless whether the major premise is a two-sided possibility, or a non-necessary existential, or a non-perpetual existential, whether a determinate temporal necessity or an indeterminate temporal necessity.[11] For the major premise signifies that whatever the middle term holds true of, in whatever way, the major term also holds true of it with the same modality expressed in the major premise. The minor premise signifies that the middle term is possibly true of the minor term. If this possible thing occurs, then the major term holds true of the minor term with this same modality. But if it does not hold true, then it may be that the

11 That is, whether at a given time or dispersed across several times.

major term is not true of the minor, because its holding true of it depends on the middle term holding true of it. When the middle term does not hold true of it, then neither does the major term hold true of it, [275] though it may be that it holds true even in the absence of this dependence [i.e. the major term just happens to hold even though the middle does not], and the shared extension is that of two-sided possibility. [...]

[276.8] *As for the fourth case*, which was that if the major premise accepts both necessity and non-necessity—there are four types of propositions like this: one-sided possibility,[12] general absolute, general conventional, and general conditioned—then the conclusion is a universal one-sided possibility proposition. Because [suppose it] accepts necessity, if it is true by itself and thus necessary, then the conclusion is necessary, too. Otherwise, it is a two-sided possibility. But the shared extension is one-sided possibility.

[T12] Al-Kashshī, *Ḥadāʾiq*, fols. 89ᵛ2–12

[***productivity rules for mixed modal conditionals***]

When the minor term belongs to the middle term in actuality in the case of two possibility premises, then this amounts to eleven kinds of propositions. And when the major premise is a proposition in which the duration of the predicate, as the description of the subject, is not expressed, and this can involve both conditioned and conventional premises, this amounts to nine kinds of propositions. In all of these, the conclusion follows the [modality of] the major premise, because the meaning of the major premise in all of them is that whatever holds true of the middle term, however it may be, also holds of the major term (or its negation), either without explicit modality if it is an absolute, or with explicit mention of a specific modality if it is modalized. The minor term, as that of which the middle term holds true, has the major term predicated of it without that modality, except in cases where the minor premise is necessary and the major premise a perpetual negation. In this case the conclusion follows [the modality of] the minor premise. Otherwise, the falsity of the minor premise follows.

12 And, in contrast to the kind of possibility mentioned in the previous note, "general (*ʿāmm*)" or one-sided possibility means simply not impossible, i.e. either contingent or necessary.

[T13] Al-Khūnajī, *Kashf al-Asrār*, 272.4–274.17

[***Avicenna's arguments that syllogisms with possibility minors are productive***]

The Master [Avicenna] claimed that all of these [modal syllogisms] are productive. He made the conclusion in [syllogisms with] necessity majors necessary, while the conclusion from non-necessity [propositions] is a two-sided possibility, and the one from premises including both is a one-sided possibility. He said that if the syllogism is in the first figure and stands in need of a proof, it is not possible to provide the proof by means of the converse of the minor or major premise, insofar as one would be relying on something less clear [to prove what is more clear], but in another way.

He demonstrates the first [sc. that syllogisms with necessity majors produce necessity conclusions] in several ways.

First, suppose the contradictory of the conclusion is true—namely "possibly, some Js are not A"—and we stipulate this possibility to exist, and make it the minor premise, so that it produces a conclusion with the major premise in the second figure, contradicting the [original] minor premise. It does not follow from our stipulation that "some Js are not A in reality" becomes impossible, for that was also possible, and nothing impossible follows from the stipulation that [something possible] occurs. Rather, because it is impossible, it does not follow from a true premise. Hence, "some Js are not As" as a one-sided possibility is false.

[273] *Second*, we add the contradictory of the conclusion after stipulating its occurrence to the minor premise so that this produces the contradictory of the major premise in the third figure, in the same way as just mentioned.

Third, we stipulate the minor premise to be existent, so that there follows that which contradicts the contradiction of the conclusion, and this implies an absurdity. But this is implied not by stipulating the minor premise to occur in actual reality due to its possibility, nor by the true major premise, but by that which is doubted in it: the contradictory of the conclusion.

Fourth, if the major term is not necessarily [true of] the minor term, once it is described by the middle term, inevitably it becomes necessarily [true of] it, and what was not necessary then becomes necessary. This is absurd, because what we mean by "necessary" is that which is necessary absolutely and whose

essence remains existent. The transformation from necessity to non-necessity and vice-versa only because of a change in attributes and states is impossible.

[***replies***]

Reply to the first: you unduly assumed that an absurdity follows if the contradictory of the conclusion occurs in actual fact, or if it is jointly present with the major premise itself. But the first is impossible, because it may be that the major premise is not true even if the contradictory of the conclusion is taken to occur in actual fact. Hence, nothing absurd follows that would be the conclusion of the syllogism, and there is nothing impossible about the occurrence of something in actual fact and the non-existence of its possible concomitants. If what is assumed is the second [i.e., if the contradictory of the conclusion is jointly present with the major premise itself], then we concede the hypothetical [premise], and the impossibility of the antecedent, but [that does not mean] that the contradictory of the conclusion follows from it—even if the other premise were true—because it may be that something is possible in itself, but it is absurd that it occur *together* with something else that is possible or necessary. Absurdity does not arise from just one part of the combination, but only from both [parts] together.

Let it not be said: this infringes on all syllogisms of the *reductio ad absurdum* form. For the conclusion sought here is the falsity of the conclusion's contradictory, and if its occurrence together with something else implies an absurdity or a falsity, then there follows [274] from its falsity the falsity of both and the truth of the remaining parts [of the syllogism], because whereas the *falsity* of the combination does necessitate the falsity of some of its parts, its *impossibility* does not necessitate the impossibility of its parts. You have now taken note of this matter regarding the necessity of the converse negation, and there will be more clarification about this shortly.

And let it not be said here: the contradictory of the conclusion together with the major premise implies the falsity of the minor premise, because a possibility [premise] together with a necessity [premise] implies a necessity in the second figure, so that they are false in combination, and hence the contradictory of the conclusion is false. Or we claim that the conclusion is perpetual and its contradictory "Some J is not B by general absoluteness (*bi-l-iṭlāq al-ʿāmma*)," together with the necessary major premise, is in the second figure productive of a necessity proposition contradicting the minor possibility premise. For we explained that a possibility [premise] together with a necessity [premise] in the second figure—even though the syllogism about this consists of two necessity

[premises]—is not productive of a necessity proposition. Rather, [it produces] a perpetuity proposition which does not contradict the minor premise, and no absurdity follows from this. *This is also the reply to the second and third* [of Avicenna's points].

Reply to the fourth: by no means do we concede that the minor term—if it is not necessarily [true of] the major term—is described by the middle term in actual fact, so that what you said about its becoming necessary once it is described by the middle term would come to pass. This is because possibility is never just one of two disjuncts (*lā yunāfī al-khuluww dā'iman*) and its description in itself (*fī nafs al-amr*) does not require it to be so in actual fact at all, such that the transformation [from possibility to necessity] you mentioned would follow. This would only be so if you claimed that its being described by the middle term held in itself (*fī nafs al-amr*) and the transformation would be likewise so. Or else, if you claimed that the transformation was only so on account of its being described by the middle term—even if it didn't occur this way—then what we mean by "transformation" would be that in this case the major premise is true. But this leads to the same issues as with the first point, and what you have learned there applies here too.

[T14] Al-Abharī, *Kashf al-ḥaqā'iq*, 138.5–139.7

[***disagreement with al-Rāzī on mixed modal syllogisms***]

Regarding the first figure: the minor premise in it is either actual or possible. If it is possible, then the major premise is either a necessity premise or a perpetual or a two-sided possibility premise that applies either to one of its parts or to the whole.

Concerning the first option, [al-Rāzī] claimed that the conclusion is a necessity proposition, because the major premise signifies that everything of which the middle term holds true in actual fact has the major term hold true of it by necessity; and the minor premise signifies that the middle term is possibly true of the minor term. On the assumption that this possibility occurs, the major term will hold true of the minor term by necessity, and everything whose being is necessarily true on the assumption that a possible event actually occurs is necessary, regardless of whether this possible event occurs or not. This is because it is impossible that something become necessary on account of its occurrence despite being non-necessary in itself (*fī nafs al-amr*).

But this calls for further inquiry. For we do not concede that, on the assumption that this possible actually occurs, [139] the major term will necessarily hold true of the minor term. It is only necessarily [true] if the major premise remains true on that assumption. Assuming that it is accepted [as true, the syllogism] cannot be productive. It is only productive if the following proposition is true: "For everything of which the middle term holds true on this assumption, the major term necessarily holds true of it." But this is rejected. What is true on this assumption is rather: "Everything that is a B in itself (*fī nafs al-amr*) is necessarily A." From this it does not follow that "Everything that is B, on the assumption that B obtains when [this thing] is J, it is necessarily A." Hence, it does not follow that the major term is necessarily true of the minor term on the assumption that the middle term obtains for [the minor term].

[T15] Al-Abharī, *Khulāṣat al-Afkār*, 279.7–280.20

[***disagreement with Avicenna on first figure mixed modal syllogisms***]

This is the gist of [Avicenna's] account after cutting down its longwindedness. But most of it is unconvincing.

As for the first figure, we do not concede that if the minor premise is an actuality premise, then the conclusion in which it is repeated follows [the modality] of the major premise. This is because a minor premise that is a general absolute or an existential [premise], together with a general conventional [premise], produces a general absolute [proposition] as a conclusion, whereas with a restricted perpetuity premise it produces a non-perpetual existential conclusion. Nor do we concede that in a repetitive [syllogism of this form, the conclusion] is a necessity premise, because the major term is perpetually true of what the middle term holds true of in actual fact, and the middle term is necessarily true of the minor term, so that the major term is perpetually true of the minor term and the conclusion is a perpetuity proposition. *Moreover, we say*: we do not concede that if the minor premise is possible, then together with a major premise that is also possible, it produces a possibility conclusion.

As to his words: "J falls under B potentially, so that what is true of B potentially, is true of J," *we say*: didn't you say that it follows from this that the major term is true of the minor term potentially? This is because the major term is substantially (*bi-l-dhāt*) possible of that for which the middle term holds true in actuality. But it does not follow from this that it is possibly true of that for which

the middle term is true *potentially*. Hence it does not follow that it obtains for the minor term potentially.

[280] *As to his words*: "the major term is possibly true of the middle term, which is possibly true of the minor term," *we say*: we do not concede that [the major term] is possibly true of the middle term. Rather, it is possibly true of the substance of which the middle term holds true in actuality, and the minor premise signifies that the middle term is possibly true of the minor term. It doesn't follow from this that the substance of which the middle term holds true in actuality is possibly true of the minor term, so as to imply that the major term is possibly true of the minor term.

His saying "together with an existential or a special conventional premise it produces a two-sided possibility [conclusion]" is obviously unconvincing.

As to his words, "together with a general absolute and a general conventional premise it produces a one-sided possibility conclusion," *we say*: we do not concede this.

As to his words, "if the minor term obtains potentially, then the conclusion is a two-sided possibility [proposition]," *we say*: we do not concede this either. The argument he produced earlier to show this is unconvincing.

As to his words, "together with a necessity [premise] it produces a necessity conclusion," *we say*: we do not concede that if the middle term is stipulated to be existent for the minor term in actual fact, then the major term is necessarily true of the minor term. As for the major premise, we do not concede that its truth is preserved on that assumption. Nor do we concede that it signifies that the major term is necessarily true of the minor term on that assumption, because what it signifies is that for everything of which the middle term holds true in actual fact, in itself (*fī nafs al-amr*), the major term is necessarily true of it. But here it was assumed that the minor term is described by the middle term not "in itself" (*fī nafs al-amr*), and hence it does not follow that the major term is necessarily true of it.

Concerning the second point, we do not concede that two necessity premises in a second figure [syllogism] jointly produce a necessity conclusion. Nor do we concede that two possibility premises in the third figure produce a two-sided possibility conclusion. All of this is impossible on our view, and we reject it.

[T16] Al-Abharī, *Khulāṣat al-Afkār*, 280.21–281.9

[*disagreement with Avicenna on mixed modal syllogisms: second and third figures*]

As for the second figure, we do not concede that if one of its two premises is a necessity proposition, then the conclusion is a necessity proposition [as well]. If this is shown by a *reductio* proof, then it turns on mixing possibility [281] and necessity premises in the first figure, which then produce a necessity conclusion. But it has already been said that this is unconvincing. If it is shown by conversion, then it turns on a negated necessity premise that is opposed to itself, and the deficiency of this has likewise already been discussed.

Moreover, we say: we do not concede that a conventional premise together with a possibility premise produces a one-sided possibility conclusion, for this cannot be shown by either *reductio* or conversion.

As for the third figure, we do not concede that if the minor is a possibility premise, then [the syllogism] is productive. This claim depends on the idea that the possibility premise converts to a one-sided possibility premise, and that the possibility premise can be the minor premise in the first figure. All this was already said to be unconvincing. The deficiency of his words, "if the minor premise is an actuality premise, then the conclusion follows the [modality of] the major premise," is the same as what you have learned about the first figure.

[T17] Al-Abharī, *Khulāṣat al-Afkār*, 286.11–288.21

[*disagreement with al-Rāzī on first figure mixed modal syllogisms, cf. T11*]

This is the summary of [al-Rāzī's] account after cutting down on its verbosity, and most of it is wrong. *As for the first figure*, we do not concede that if the minor premise is a possibility premise and the major a necessity premise, then it produces a conclusion [with the same modality] as the major premise. Concerning the argument that he adduced for this, its weakness has already been discussed in connection with the Master [Avicenna's] position.

The Imām [al-Rāzī] advanced a critique regarding mixed necessity and possibility [syllogisms], saying: "when we truly say 'possibly: every sperm is a human' and 'necessarily: every human is an animal,' [287] it does not follow that 'necessarily: every sperm is an animal.'" He replied to this by saying: "we do not concede that the major premise is an absolute necessity proposition; rather,

it is general conditioned proposition." But this is unconvincing, because the absolute necessity proposition is such that its predicate cannot be possibly separated from the subject as long as its substance persists. Animality cannot possibly be separated from humanity as long as its substance exists, so the major premise is necessary. But we reject the minor premise, for the substance which is truly said to be a sperm cannot be described as "human." Rather, a sperm can possibly *turn into* a human, but then the form of the sperm ceases to belong to the matter and the form of humanity arises in it instead.

We have taken the trouble [to present] for them an argument to show that a possibility minor together with a necessity major produces a necessity conclusion. Namely, that if it is true to say "every J is possibly B, and every B is necessarily A, therefore every J is necessarily A"—because if we stipulate the truth of "every J is B in actual fact" this entails the truth of "every B is necessarily A"—then there follows from this and from "every J is necessarily A" either the truth of "not: every J is perpetually B" or "every J is necessarily A." From this it follows what was claimed.

We say, however, that from this only one of the two things follows, because from the truth of a [conditional] implication follows either the contradictory of the antecedent or the consequent itself.[13] If what occurs is the consequent itself, then it is one of the two things [that follows]. If what occurs is the contradictory of the antecedent, and "every B is necessarily A" is true, then there follows the falsity of "every J is B in actual fact, therefore, not: every J is perpetually B." We say that from this it follows that what was claimed holds true. For, since one of the two things is true, if "every J is B in actual fact" is true, then "every J is necessarily A" is [as well], based on the fact that an exclusive disjunction implies a conditional composed of the contradictory of one of the parts and the other part itself [i.e.: p or q = if not-p then q]. If it is necessary on this assumption, it must also be necessary in itself (*fī nafs al-amr*), because it is impossible for something that is not necessary to turn into something necessary on the assumption that [288] the predicate exists and possibly obtains for the subject. The answer to this is to reject that the disjunction implies the truth of a conditional composed of the contradictory of one of the parts and the other part itself, based on what has become clear to us regarding the falsity of this principle.

13 That is, from "if p then q" one can infer "either not-p or q."

As for the second case [sc. the major premise is perpetual], we do not concede that it is productive of a perpetuity conclusion. We have seen that the argument mentioned earlier was unconvincing. But, even assuming that it is accepted here, it does not lead to a perpetuity [conclusion], because we say: we do not concede that what is not perpetual *cannot possibly* be perpetual, just on the assumption of something that is [merely] possible; the fact that no such impossibility arises is obvious, and needs no proof.

As for the third case [sc. the minor premise is neither necessary nor perpetual], we do not concede that if the middle term obtains in actual fact, then the conclusion is a two-sided possibility [proposition]. This is connected to what was said earlier concerning the rejection of a possibility minor with a necessity major.

As for the fourth case [sc. major premise is neutral with respect to necessity], we do not concede that if the universal major premise is not necessarily true, then the two-sided possibility proposition is true, because it may be that the nexus of the predicate to *some* instances of the subject term is a two-sided possibility [relation], while for *others* it is a necessity [relation]. From the falsity of the universal major necessity premise, it does not follow that it is true as a universal two-sided possibility premise.

Concerning [*al-Rāzī's*] *statement*, "if the minor premise allows for perpetuity and non-perpetuity and the major premise is a special conventional [premise], by joining them no apodictic judgment occurs," this too is unconvincing. Because it is only the case that no apodictic judgment occurs by joining them, if the apodictic judgment does not occur on account of the concept susceptible to perpetuity in the minor premise, whose major premise is a special conventional [proposition], and it is true of a non-perpetual proposition. The apodictic judgment occurs because its being true of the perpetuity is impossible; otherwise, the major term would be both perpetually true of the minor term and non-perpetually true of it. Since this is so, by joining them, an apodictic judgment occurs.

[T18] Al-Abharī, *Khulāṣat al-Afkār*, 288.22–290.6

[*disagreement with al-Rāzī on mixed modal syllogisms in the remaining figures*]

Concerning the second figure, we say: we do not concede that if one of the premises is a necessity proposition, the conclusion is so as well. *As to his saying*,

"if the other premise is a necessity proposition, then [289] the predicate necessarily holds true of one of the terms, and is necessarily negated of the other term, so that between the two terms there is an obvious distinction," *we say*: we do not concede this. For if this is shown by *reductio*, then it turns on mixing possibility and necessity premises in the first figure, which then produce a necessity conclusion. Whereas if it is shown by conversion, then it turns on a negated necessity premise that is opposed to itself. We have gone over the fact that this is unconvincing.

As to his saying, "if one of two premises is a perpetuity proposition, then the conclusion is a perpetuity proposition as well," *we say*: we do not concede this, because if one of them is a perpetuity proposition and the other a possibility proposition, then [the syllogism] is not productive. For one may deny that it is possible that one of two co-extensive terms holds *perpetually* of the other, and vice-versa, even though neither can be denied of the other [for a limited time].

As to his saying, "if the major premise is one of two conventional (*ʿurfiyyatayn*) or conditioned (*mashrūṭatayn*) propositions taken with a possibility [minor], then they produce a one-sided possibility conclusion," this is rejected. For [such a syllogism] is not productive, whether by conversion or by *reductio*.

When he says, "two conditioned premises produce a general conditioned conclusion," this too is rejected. This would only follow if the negative general conditioned premise converted to a general conditioned proposition, but we have gone over the fact that this is unconvincing.

Concerning the third figure, we do not concede that the modality of the conclusion is the same as in the first figure. For, if the minor premise is a necessity, perpetuity, conventional or conditioned premise and the major premise one of two conventional or conditioned premises, then the modality of the respective conclusions are different from what follows in the first figure.

Concerning the fourth figure, if in the first two moods the premises are possibility propositions—since we can turn the major premise into a minor and the minor into a major premise—this comes down to the mixed possibility [syllogisms] in the first figure, and we have gone over the fact that this is unconvincing. If only the major premise is a possibility proposition, this comes down to the mixed case [290] with a possibility and actuality minor in the first figure. If only the minor is a possibility proposition, then upon conversion of the arrangement it produces a possibility proposition, but it does not convert to

the intended conclusion, since we have shown that the possibility proposition is not acknowledged as converting. If both are actuality premises, then so is the conclusion, which is more specific than a one-sided possibility proposition. As for the three remaining moods, in the cases where they come down to the conversion of the minor premise to a false premise in the second figure, then in these cases they are false; but if to a true one, then true. But we won't extend the discussion to the details here.

[T19] Al-Ṭūsī, *Taʿdīl*, 206.10–207.7

[***against al-Abharī on the productivity of first figure syllogisms with possibility minors***]

[*Al-Abharī*] *said*: concerning the first figure [syllogism], if its minor premise is a possibility premise, then the productivity condition is not satisfied, because the minor term might not fall under the middle term.

I say: if what is meant by "falling under (*indirāj*)" is that there is an affirmative judgment of the minor term in actuality, then we do not concede that this is a condition for productivity. But if [he means] that the affirmative judgment could be made, then we do not concede that the condition is not satisfied in a possibility minor.

He said: if the middle term is stipulated in actuality together with a necessity major—so that the major term becomes necessary for the minor term, and thus necessary in itself (*fī nafs al-amr*) because it is impossible to transform something that is not necessary into something necessary—then we reject the major on this assumption.

I say: it is impossible for this [kind of] minor premise that the stipulation of its actual occurrence be opposed to the truth of the major premise, simply because it is a possibility proposition, and it must not be inconceivable (*muḥāl*) of itself. [Note that] I do not say, "inconceivable in respect of something else," but only that we can rule out the impossibility of the necessity major in itself. Therefore, the rejection of the major premise on the assumption of the actual occurrence of the minor premise in this combination allows for the possible to imply something that is in itself inconceivable.

Having gone through this, we say: stipulating the minor premise to be an actuality premise is not a [207] condition for productivity in this combination. So

the production [of the conclusion] is not undermined by any faultiness that is down to [the minor premise's being merely possible]. Rather [adding that the possibility is actually realized] is a way to show that [the syllogism] is in fact productive; but eliminating this way of showing [its productivity, sc. by saying the minor is only possible and not actual] does not eliminate the judgment [sc. that the conclusion does follow from a syllogism with a mere possibility minor].

Something that in itself indicates the productivity of this combination is that the substance (*dhāt*) of the minor term in this combination cannot possibly differ from the substance of the middle term. Otherwise, it would not be possible to predicate the middle term of it. Hence, the necessity judgment that the major term is [part of] the substance of the middle term also applies to the very substance of the minor term by itself. The same applies to the judgment of possibility. The existence judgment differs [from the necessity judgment] because it may apply only to the description (*waṣf*) of the middle term and not its substance; [in that case] it is unknown whether it actually applies to the substance of the minor term.

[T20] Al-Ṭūsī, *Taʿdīl*, 207.20–208.13

[***on composite mixed modal syllogisms and the proof for their validity***]

[*Al-Abharī*] *said*: perhaps there is no syllogism with true premises to be included among the composite syllogisms. If we say, for example: "Every J is B, always" and "Every B is A as long as it is B, not-always," and consider [these statements] to be jointly true, then an absurdity follows.

[208] *I say*: syllogisms like this one are not productive, and a demonstration [for this] is straightforward. For the two premises are not jointly true in themselves (*fī nafs al-amr*). They are productive as an implication only if we accept that B is negated of some, because in potentiality [the two premises as stated] include the following two premises: "some things that are B are always B" and "everything that is B is B, but not always," therefore: "something that is B always is not B." Because the conclusion is not composed of the minor and the major term, [such cases] do not count as a syllogism.

[*He said*]: you should know that in the first figure [the syllogism] implies the conclusion in such a way that its productivity is clear, no matter whether its two premises are true or stipulated to be true. As for the other three figures,

the demonstration of [a syllogism's] productivity is only achieved when its two premises are true, not if they are only stipulated to be true. This is because conversion is not permissible on this assumption. Likewise with *reductio ad absurdum*. For a falsity may imply an absurdity, either by being impossible by itself or in respect of something else.

I say: we do not concede that if the proof by conversion or *reductio* cannot be achieved [in these cases], then it cannot be achieved at all. For demonstration is not confined to these two methods. The true demonstration, which is called "demonstration of the reason why," would work for it. This is so even though the demonstrations by conversion and by *reductio* are not declared to be false by what we have mentioned.

[T21] Al-Kātibī, *Shamsiyya*, 213.22–216.5

[***simple and compound modal propositions***]

Predicates must relate to subjects, whether affirmatively or negatively, in a certain way (*min kayfiyya*), such as "necessarily," "perpetually," "not-necessarily," or "not-perpetually." Such a qualification is called the "matter (*mādda*)" of the proposition, and the word expressing it is called the "mode (*jiha*)" of the proposition.

There are thirteen modal propositions into which it is usual to inquire. Some of them are simple, that is to say, their true nature is simply an affirmation or negation; and some are [214] compound, that is to say, their true nature is composed at the same time of an affirmation and a negation.

There are six simple modal propositions.

(a) *Necessary absolute*. It judges that the predicate is *necessarily* affirmed or denied of the subject for so long as the essence of the subject exists, as when we say, "Necessarily, every human is animal" and "Necessarily, no human is stone."

(b) *Perpetual absolute*. It judges that the predicate is *perpetually* affirmed or denied of the subject as long as the essence of the subject exists. [The same examples are then given as under (a).]

(c) *General conditioned*. It judges that the predicate is *necessarily* affirmed or denied under the condition that a certain attribute (*waṣf*) [applies to] the sub-

ject, as when we say "Necessarily, every writer is moving the fingers as long as he writes" or "Necessarily, a writer does not keep his fingers at rest as long as he writes."

(d) *General conventional*. It judges that the predicate is *perpetually* affirmed or denied of the subject under the condition that a certain attribute [applies to] the subject. Same examples [as for the general conditioned].

(e) *General absolute*. It judges that the predicate is *actually* affirmed or denied of the subject, as when we say "Every human without exception [lit. 'with general absoluteness': *bi-l-iṭlāq al-ʿāmm*] is breathing," or "No human is breathing, without exception."

(f) *General possible*. It judges that there is no absolute necessity on the side of what is contrary to the judgment, as when we say "By a general possibility all fire is hot," or "By a general possibility what is warm is not cold."

[***compound modal propositions***]

The compound modal propositions are seven in number.

(a) *Special conditioned*. It is the same as the general conditioned, with the restriction that [the relation of the subject to the predicate] is not perpetual in regard to the substance [of the subject]. If it is affirmative, as "Necessarily, every writer moves his fingers as long as he writes, but not perpetually," it is composed of the affirmative general conditioned and negative general absolute propositions. Whereas, if it is negative, as "Necessarily, the fingers of a writer are not at rest as long as he writes, but not perpetually," it is composed of the negative general conditioned and of the general affirmative absolute.

[215] (b) *Special conventional*. It is the same as the general conventional, with the restriction that [the relation does] not [hold] perpetually in reference to the substance [of the subject]. If it is affirmative, then it is composed of the affirmative general conventional and of the negative general absolute, whereas if it is negative it is composed of the negative general conventional and of the affirmative general absolute. Same examples [as for the special conditions].

(c) *Non-necessary existential*. It is the same as the general absolute, with the restriction that [the relation does] not [hold] of necessity in reference to the substance [of the subject]. If it is affirmative, as "Human is actually risible, but not necessarily," it is composed of the affirmative general absolute and the

negative general possible. Whereas if it is negative, as "Human is not actually risible, but not necessarily," it is composed of the negative general absolute and the affirmative general possible.

(d) *Non-perpetual existential*. It is the same as the general absolute, with the restriction of non-perpetuity in reference to the substance [of the subject]. Whether it be affirmative or negative it is composed of two general absolute [propositions], one affirmative and the other negative. Same examples [as for the non-necessary existential].

(e) *Temporal* (*waqtiyya*). It judges that necessarily, the predicate is affirmed or denied of the subject during a definite period of the subject's existence, with the restriction that [the relation] does not [hold] perpetually in regard to the substance [of the subject]. If it is affirmative, as "Necessarily, an eclipse of the moon takes place during the time the earth is placed between the sun and the moon, but this is not the case perpetually," it is composed of the affirmative absolute temporal and the negative general absolute. Whereas if it is negative, as "Necessarily, no eclipse of the moon takes place when the earth, moon and sun are at right angles, but this is not the case perpetually," it is composed of the negative absolute temporal and the affirmative general absolute.

(f) *Spread* (*muntashira*). It judges that necessarily, the predicate is affirmed or denied of the subject during an indefinite period of the existence of the subject, with the restriction that [the relation] does not [hold] perpetually in regard to the substance [of the subject]. If it is affirmative, as "Necessarily, every human is breathing at times, but this is not the case perpetually," it is composed of the affirmative absolute spread [proposition] and the negative general absolute. Whereas if it is negative, as "Necessarily, no human is breathing at some time, but this is not the case perpetually," it is composed of the negative absolute spread [proposition, which is not composite] and the affirmative general absolute.

(g) *Special possible*. It judges that there is no absolute necessity, either for existence or nonexistence. It makes no difference whether it is affirmative, as "By [216] special possibility, every human is a writer," or negative, as "By special possibility, every human is not a writer." It is composed of two general possible propositions, one affirmative, the other negative. The general rule here is that, if a proposition is restricted by non-perpetuity, it indicates that it is a general absolute proposition, while if it is restricted by non-necessity, then it is a general possible proposition disagreeing in mode but agreeing in quantity.

[T22] Al-Kātibī, *Shamsiyya*, 226.22–227.3 (trans. Rescher, mod.)

[***productivity of mixed modal syllogisms in the first figure***]

As to the first figure, its condition for productivity is that the minor is an actuality proposition. The conclusion here is the same as the major [in modality], if [the minor] is other than one of the two conditioned and the two conventional propositions. In these cases [i.e. if the minor is one of these four], then [the modality of the conclusion is] the same as the minor, removing from [the conclusion] the restriction of non-necessity or non-perpetuity found in the minor, if the major is one of the two generals, and after adding the non-perpetual to [the conclusion] if [the major] is one of the two specials.

[T23] Al-Kātibī, *Munaṣṣaṣ*, fols. 120^{v}13–121^{r}7

[***commentary on T10: criticism of al-Rāzī on syllogisms with possibility minors***]

Know that the Imām [al-Rāzī] mentions three preliminary points concerning these mixed modal syllogisms and the explication of their conclusions. The first is that if the minor premise is one of the possibility propositions, then the major premise must be one of the following: (a) necessary absolute, (b) perpetual absolute, (c) non-necessary and non-perpetual, or (d) any of them, that is: any of the first three types. If it is a necessary absolute, then the conclusion is a necessary absolute as well. He justifies this by saying, "the major premise signifies that whatever the middle term" actually "holds true of, in whatever way"—that is, regardless whether it is *necessarily* true of it actually, whether substantially or descriptively, or for a certain time; or *always* substantially or descriptively; or neither necessarily at all nor always in [combination] with one of these notions—"also has the major term hold true of it," necessarily and "at all times" and respects before, together with, or after the obtaining of the middle term in actuality. "The minor premise signifies that the middle term may possibly hold true of the minor term" and nothing that is possible implies an absurdity when it is stipulated to occur. Then it is stipulated that the middle term is true in actuality of the minor term. On this assumption the major term is true of the minor term in the sense of the necessary absolute, that is: at all times at which the essence of the minor term exists. There is then a perfect syllogism. This is because in this case it is true to say "Whatever the minor term holds true of in actuality, of that the middle term [also] holds true in actuality," and "Whatever the middle term holds true of in actuality, of that the major term is necessarily true, at all times at which its substance exists,"

which then produces the conclusion "the major term applies to each instance of the minor term at all times at which its essence exists." If it is necessary on this assumption, then it must be necessary in itself (*fī nafs al-amr*) too, regardless of whether the possible actually occurs in actuality or not. For if it weren't necessary in itself, then it would be impossible that it become necessary on this assumption, because what is not necessary in itself cannot be necessary when something possible is assumed. Otherwise, the possible would imply that something that was not necessary before can be transformed [into something necessary], which is absurd. Thus, he shows that this mixed modal syllogism is productive of a conclusion in the necessary absolute.

But this calls for further inquiry, for we do not concede that the arrangement of the abovementioned syllogism [is valid], on the assumption that the middle term is true of the minor term in actuality. The arrangement would be valid only if the universal necessity major premise were true on this assumption. But this is rejected, because on this assumption the numerous instances of its subject would severally have to be necessary.[14] It cannot be said in this case, concerning the necessity of the instances of the minor term taken together, that if the necessity conclusion is not true, then the possible implies no absurdity. For if the major premise that is necessary in itself (*fī nafs al-amr*) is not true on the assumption of the truth of the minor premise in actual fact, then an absurdity does follow from the possible, because the contradictory of the necessary is impossible. If [the major premise] is true, it implies a necessity conclusion because of some part and we stipulate it to be non-necessary in itself, and the possible again implies an absurdity. For the necessary cannot be true of something non-necessary, because we say: by no means do we concede that if the necessity major premise is true, that on this assumption a syllogism comes together at all. It only comes together if the minor term falls under the subject term of the major premise. And it only falls under it if what is meant by the major premise is that everything that is the middle term in actuality, absolutely and regardless of whether it is so in itself or on this assumption, *also is* the major term. But this is not so. Rather what is meant by it is that everything that is actually the middle term in itself is the major term. If that is indeed the meaning, then it could be that the minor term is not in actuality in itself [the major term], even if it is described as being so on this assumption. Since the syllogism does not come together, no conclusion results, let alone a necessary one.

14 That is, "All As are Bs" is necessarily true only if there are no actual instances of A that are not B.

[T24] Al-Kātibī, *Jāmiʿ al-daqā'iq*, fols. 71v9–72r15

[*mixed modal syllogisms in the first figure are only productive with actuality minors*]

Let us investigate the mixed modal syllogisms in which the thirteen [types of modal propositions are combined] with one another in the four figures. *Concerning the first figure*, the condition of its productivity with regard to modality is that its minor premise be an actuality premise, because if it were a possibility premise, then it would not follow that the minor term falls under the middle term on which judgment is passed in the major premise. For the major premise signifies that whatever the middle term applies to in actuality, the major term applies to it also (or is denied of it, with the modality expressed in it). And the minor premise indicates the possibility that the middle term is true of the minor term. But the possibility that one thing hold true of another does not require that it holds true of it in general, because it may be that something is possibly true of something else, without in fact applying to it at all. Since this is so, there is no apodictic judgment that the minor term falls under the major term, nor is there any apodictic judgment of the conclusion. So clearly there is no apodictic judgment of the productivity of the syllogism in this figure, unless the minor premise is an actuality premise.

[*objection: productivity with possibility minors can be saved by an argument from extension*]

Let it not be said: if we say "Every J is possibly B" and "Every B is necessarily A" this produces the conclusion "Every J is necessarily A" because B, which is predicated possibly of all instances of J, must have a more general extension than it when taken absolutely, or [at least] be co-extensive with it. For what is more specific than something—whether absolutely or in some respect—and is distinct from it, cannot be predicated of each of its instances. This being so, the major term predicated necessarily of each of its instances is necessarily predicated of each of the instances [72r] of the minor term. If the predicate of all instances has a more general extension in some modality, then it must also be predicated of a more specific extension of the instances in that modality, because the more specific extension among the instances is just part of the more general extension over those instances. Likewise, the predicate of all instances could be co-extensive with another [term], and in a given modality the predicate of all the instances will be co-extensive with the other [term] in this modality, because of the overlapping of the extensions of the two [terms] in the instances.

[*reply to the objection*]

Because we say: we do not concede that what is predicated of each of the instances of the subject term in a possibility proposition must have a more general extension than the subject term taken absolutely, or be co-extensive with it. There is no proof for this, unless each single one of the Js [has the predicate] in actuality. "Capable of laughing" in actuality has a more specific extension than "human" taken absolutely, even though both are predicated by possibility of all instances of "human." Likewise, "whiteness" in relation to "animal" has a more general extension in some respect, and a more specific extension in another, even though it is predicated by possibility of all its instances. It is true that possibly every animal is white, but one of the two distinct things is possibly true of each of the instances that has the other [that is, what is not-white is possibly white, and vice-versa]. So it is true when we say "Possibly: every mobile thing is at rest" and also true when we say "Possibly: every resting thing is mobile." In this case one can go so far as [to say that] some instances of mobile things cannot be at rest, while some instances of resting things cannot be moving. But this is due to external factors. The instances of each of the two in respect of its essence accepts the other [e.g. the moving, as such, is always possibly at rest]. This being so, from the fact that something is necessarily predicated of everything that is truly said to be actually B, and that B is possibly predicated of all instances of J, it does not follow that this thing is necessarily predicated of all instances of J. For it may be that the B predicated of all instances of J by possibility has a more specific extension than J taken absolutely, or in some respect, or that it is distinct from it. There is no requirement that predication of each of the instances of these things by necessity [guarantees] predication of everything of which these things are possibly true, because it may be that their predication of it is only potential. Hence, it does not fall under the subject term of the second premise, and no productivity follows.

[T25] Al-Urmawī, *Maṭāliʿ*, 74.6–76.9

[*the productivity of syllogisms with possibility minors*]

The Master [Avicenna] and the Imam [al-Rāzī], and those who follow them, claimed that (a) possibility minors together with necessity [majors] are productive of a necessity [conclusion]; (b) that together with a non-necessity major they are productive of a two-sided possibility [conclusion]; (c) and that together with all others, they are productive of a one-sided possibility [conclusion].

(a) But several objections have been raised against the first [claim].

First, one may take the contradictory of the conclusion as an absolute [proposition] or stipulate it to [be true] in actual fact, and then add it to the major premise so that in the second figure it produces the contradictory of the minor premise. *Reply*: we do not concede that the major necessity premise in the second figure produces a necessity proposition.

Second, one may add [the contradictory of the conclusion] to the minor possibility premise, so that in the third figure it produces the contradictory of the major premise. *Reply*: we do not concede that the minor possibility premise in the third figure is productive.

Third, if the minor premise obtains in actual fact, it implies a necessity conclusion. But [the conclusion] is also necessary if it is assumed to not occur, because if something is necessary on any possible assumption, then it is necessary on [a given] possible assumption. *Reply*: we do not concede that the major premise is true on the assumption that the minor premise obtains in actual fact, because there might be more individuals falling under the subject term of the major premise [to which the predicate in the major premise does not apply].

(b) The same objections have been raised against the second [claim], and also [the second claim] would change the structure of *reductio* syllogisms.

(c) Against the third [it has been argued] (c1) that if the major premise is necessarily true, then the conclusion is a necessity proposition as well; [75] if not, then [the conclusion] is a two-sided possibility proposition. Either way [the conclusion] is a general possibility proposition.[15] Also, (c2) the conclusion in [the first] figure follows the major premise in being indeterminate with regard to the necessity and the duration of the two attributes. If [just] one of these is determined, then [the conclusion] follows the minor premise in being indeterminate with regard to existence and necessity as well, if there is no necessity in the major premise.

(c1) *As for the first objection*, it is obvious that [the syllogism] is not included [among the productive ones].[16] Al-Kashshī claimed that the minor necessity

15 That is, because both necessary and two-sided possible fall under one-sided possibility.
16 Reading *li-lā-indirāj*.

premise together with the major premise as a perpetual negation produces a necessity proposition by conversion and *reductio* (*khulf*). *Reply*: as to conversion, it is denied that the mentioned syllogism in the second figure produces a necessity proposition. As to *reductio*, it is denied that a possibility proposition together with a perpetuity proposition in the second figure is productive.

(c2) *Concerning the second objection*: the middle term describes the major term perpetually, then the major term thereby holds true of the minor term on account of that fact; but if it is perpetually true by necessity, the major term thereby holds true of the minor term. This does not require the determination of existence, I mean the non-perpetuity and the non-necessity of the minor premise, because the major term—even if it lasts as long as the middle term lasts—may not be restricted only to the time it [is true of] the middle term, so that it is true of it even if the middle term no longer subsists. Nor does the major premise on its own require necessity in this case, because it may be that the necessity of the major term is determined by the middle term, so that it will not hold true once the middle term's possibility is not realized. Nor does the minor premise on its own require it, because if the perpetuity of the middle term for the major term is not necessary, then it may be that the major term is denied, even if the middle term holds true by necessity.

[76] Al-Kashshī claimed that the minor necessity premise together with a major premise that is a negated general conventional (*ʿurfiyya ʿāmma*) is productive of a necessity proposition by conversion and *reductio*. But you have learned the answers to both already.

If it is said: a major premise that is a general conditioned (*mashrūṭa ʿāmma*), together with a minor perpetuity premise, produces a necessity [conclusion]. For the necessity of the major term, being perpetual thanks to the middle term's perpetuity, and lasting as long as the substance of the minor term, yields [a conclusion that] is true as long they are true. *Then we say*: this necessity is only on condition of the description of the middle term, which is not what was being sought in the conclusion.

[T26] Ibn Wāṣil, *Sharḥ al-Jumal*, 130.12–131.9 [trans. El-Rouayheb, mod.]

[*Ibn Wāṣil reports al-Khūnajī's argument to deny the productivity of syllogisms with possibility minors*]

You should know that this proof [provided by Avicenna] is most unconvincing. For we do not concede that [even] on the assumption of the truth of the minor as actual [and not merely possible], the universal major remains true. Rather, it is possible that on this supposition the middle term will include what the major term is not true of necessarily, in which case the major is necessarily true only of a particular, and the conclusion will not be fully achieved. We give an example that clarifies the objection: let us suppose that Zayd has never ridden, except on a donkey. Then it would be true that every horse is possibly ridden by Zayd, and on our assumption clearly everything ridden by Zayd in actual fact is necessarily a donkey. Yet it is not true that every horse is necessarily a donkey. If we suppose the possibility minor to be true actually, then the horse would be one of the individuals that are ridden by Zayd and would fall under [the description] "What is ridden by Zayd," and the major would cease to be true as a universal. [...]

[131.3] The example just mentioned on this matter is a counterexample which makes known the sterility of the mentioned syllogism [with a possibility minor], if the proposition is understood in accordance with external existence [i.e. on an externalist reading, cf. T9]. If it is understood in accordance with the true nature [i.e. on an essentialist reading, cf. T9]—meaning that when we say every J is B, then all that *were* it to exist would be J, would when it existed, be B—then the counter-example does not apply. Yet the objection we have offered remains. For it is enough for our purposes that there may be more individuals falling under the subject-term of the major premise, on the assumption that the minor premise is actually [and not merely possibly] true, and it is not incumbent on us to adduce a concrete (*bi-mādda*) illustration.

We say then: if the two premises of the syllogism are externalist propositions and the minor is a possibility proposition, then it is known to be sterile by the counterexample we have adduced. If they are essentialist propositions, then judgment is suspended, and it is unknown whether it is productive or sterile.

[T27] Al-Samarqandī, *Qisṭās*, 351.15–355.5

[***on the replies to Avicenna's position that possibility minors in the first figure are productive of necessity conclusions***]

They [sc. the later logicians] replied to [Avicenna's] three arguments as follows.

Firstly, the conjunction of possibility premises may imply a contradiction, just as two sides of a possibility proposition with both sides being possible, when conjoined, imply a contradiction [in other words, P is possible and not-P is possible, but "P and not-P" is impossible]. In this case the impossibility of the conclusion's contradictory does not follow.

But this reply is unconvincing. For if their conjunction *implies* a contradiction, then it is [already] contradictory. In which case it must surely be that some of its parts are contradictory, either in and of themselves (*fī nafs al-amr*), or on the assumption that some of the other [parts] hold true while the major premise is true in the first figure, so that there follows the impossibility of occurring in actual fact. In this case there follows the impossibility of the possibility premise whose contradictory would have been the conclusion, because the possibility of something contradictory is contradictory.

[352] *The same goes for the second and the third* [*arguments*]. But the answer the Master [Avicenna] gave was to say: we do not concede that the actuality minor together with a necessity major produces a necessity conclusion, but rather that two necessity premises in the second figure produce such a conclusion. The inquiry into this will come below.

As for the second argument, we do not concede that the possibility minor is productive in the third figure. The inquiry into this follows as well.

As for the third argument, we do not concede that if we stipulate the minor to be an actuality proposition, then the major remains true, and they are productive. Rather, it is possible that [the major] is false because further instances [falling under the subject term are counter-examples], in which case the situation is like in the example mentioned. For if we stipulate that the donkey is ridden by Zayd, then the major does not remain true [cf. T26]. For in this case, it is not true to say: "everything that is ridden by Zayd is a horse." Given that this is not productive, no co-presence of contradictories follows. […]

[355.1] As for the general rule for the mode of the conclusion in this figure, it is that the conclusion follows the [modality] of the major premise if the major is not among the descriptional premises (*waṣfiyyāt*), by which I mean the two conditioned and the two conventional premises. If it is one of these four, then it follows the minor [in its modality], be it non-necessary or necessary, even if the major is necessary. It follows [the minor] as well if it is non-existential, even if the major is existential.

[T28] Al-Samarqandī, *Qisṭās*, 367.1–17

[***on al-Rāzī's position that possibility minors produce one-sided possibility conclusions***]

The Imām [al-Rāzī] claimed that if the possibility minor—be it one-sided or two-sided—together with the six negated converse propositions, produces a one-sided possibility conclusion. He argued for this on the basis that if major premises are negated, then they additionally signify that the middle and the major term are not both true. If the minor possibility premise signifies that the minor term might be described by the middle term, then the judgment that this "might" be the case must allow for a disjunction with the major term, inferring from the possibility of the negated element the possibility of the negation. If [the minor possibility premise] is affirmative, then it additionally signifies that the major term cannot be separated from the middle term. When we judge the minor premise to allow for a disjunction of the minor from the middle term, then in this case it must also allow for its disjunction from the major term, inferring from the disjunction of the antecedent that it allows for the disjunction from the consequent.

Al-Kāshshī reckoned that the possibility minor is not productive, except with negations of the converse of the major, so that it goes back to the original [problem]. But this is absurd. Neither point is true, except for possibility minors with necessity majors or with the two conditioned premises, as has been discussed before.

Concerning what the Imām [al-Rāzī] said about the three remaining premises, namely the perpetual and the two conventional ones as possibility premises, this is not right either. For inferring from the possibility of the negated element the possibility of the negation is only correct if the negated premise is necessary. Otherwise this is not correct. It may be that the major term is necessarily true of the minor, as you learned from the fact that something that is perpetu-

ally negated of a thing may be possible for it, and vice-versa. But the major term is not implied [to hold true of] the middle term in these three premises, because the middle term may be separated from it.

[T29] Al-Ḥillī, *Qawāʿid*, 355.14–357.4

[***mixed modal syllogisms***]

He [*al-Kātibī*] *said: Second Part on Mixed Modal Syllogisms. Concerning the first figure, its condition for productivity is that the minor is an actuality proposition.*

I say: you should know that the four figures, just as they are sterile when not conditioned by quantity and quality, so they are sterile when not conditioned by modality in the way we have mentioned.

[356] *Concerning the first figure*, it is conditioned by the modality of actuality in the minor premise, which means that the minor premise is one of the eleven propositions that are not possibility propositions. For the predicate of the major premise is true only of what [falls under] the middle term in actual fact, as we have established in the verification of quantified propositions. And the minor term does not [fall under] the middle term in actual fact, so that the middle term need not extend to it.

The older scholars considered the possibility minor to produce, together with a necessity major, a necessity conclusion, on the assumption that the occurrence of the possible proposition would make the conclusion necessary, which then would be necessary in itself (*fī nafs al-amr*). Otherwise the possible proposition would imply an absurdity, namely that something that is not necessary is necessary when it is assumed to be possible. From this and from a possibility minor results a one-sided possibility, because assuming the possible proposition to occur, the possibility proposition is true, so it is also true in itself. Otherwise, that which is not possible in itself would be possible on the assumption that the possible proposition occurs, which is absurd. Likewise, if the major premise is an existential proposition and the minor a possibility proposition, then [the conclusion] is only a two-sided possibility, because of the arrangement of the minor premise with one of its parts as a syllogism productive of one sided-possibility (*li-l-ʿāmma*), and with the other as a syllogism productive of a [degree of] generality (*li-l-ʿāmma*) different from the first, i.e. specific two-sided possibility.

The later scholars, however, rejected the truth of the major premise on the assumption that the minor actually occurs. But this is a mistake, because otherwise what they were trying to avoid will be forced on them after all. For if a necessity or possibility major were false on the assumption that the possible [proposition] occurs, then the possible [proposition] would imply an absurdity. The falsity of the necessary or possible [proposition] is absurd with regard to its essence. [This is so] on an existential [reading], in which case it is possible because it accepts a judgment that follows the description of the middle term without [reference] to its essence, and then it is something whose occurrence is unknown with respect to the essence of the minor term, so that it is possible for them to reject the truth of the actuality [proposition]. But [it is not so] on a possibility [reading], for the possible proposition will follow in any case.

According to the doctrine of the older scholars, the combinations in this figure are 179 productive moods that obtain from the 13 moods taken by themselves. According to the doctrine of the author [al-Kātibī], 26 of them are dropped, that obtain from the mood of two possibility [propositions] among the 13 moods.

[T30] Al-Ḥillī, *Jawhar*, 107.18–109.11

[***on al-Ṭūsī's position regarding the productivity of modal syllogisms***]

[*Al-Ṭūsī*] *said: considering the modalities* [*of syllogisms*]*, we say*: if the minor premise is negative, it implies an affirmative, and in connection with the major premise it produces a conclusion that is potentially that which the affirmative implies.

[108] *I say*: the composite negative premise which implies an affirmative, like the special conventional, the special conditioned, and the existential propositions, may be employed as a minor in the first figure, because they accommodate a tie to both affirmation and negation. But a conclusion is produced only when the affirmative tie is considered. Then it produces in potentiality the conclusion that the affirmative would produce. For example, if the following are true:

> No J is B as long as it is J but not always
> Every B is necessarily A

it follows that:

Every J is necessarily A

because the minor is composed of a negative general conventional, and the affirmative general absolute is "every J is B." If we turn the minor into a major, the conclusion follows as we said. [...]

[108.10] [*Al-Ṭūsī*] *said*: actuality minors that require that the minor term falls under the middle term in actuality, together with essentiality majors, produce a conclusion that is like the major premise [in modality], because the minor term contains some parts of the middle term, so whatever goes for the latter term also goes for the former.

I say: the minor premise in this figure is either an actuality or a possibility proposition. If it is an actuality proposition, then the major is either essential or descriptional. If it is essential, then the conclusion [follows the modality] of the major premise. So if we say, for example,

Every J is B absolutely
Every B is necessarily A

then we judge in the minor premise that J is some parts of B, so that what is true of [B] is also true of J, because we said in the major premise that every B is necessarily A, comprising all parts that taken together are J. Thus J is necessarily A, which was the intended conclusion.

[*Al-Ṭūsī*] *said*: possibility minors together with major premises that are not qualified as either necessary or perpetual produce a possibility conclusion, because the minor term only falls under the middle term potentially.

I say: concerning possibility minors in this figure, some hold that they are not productive at all. The author [al-Ṭūsī], [109] may God have mercy on him, adopted the doctrine of Abū ʿAlī [Avicenna] concerning its productivity. *Here is the detailed account* (*tafṣīl*). The major is either an absolute necessary, or an absolute perpetual, or non-necessary and non-perpetual. If it is non-necessary and non-perpetual, then the conclusion is a possibility proposition—either one-sided, if the major is not composite, or two-sided, if the major is composite.

As for the one-sided possibility conclusion, this is because if the minor is stipulated to occur, then the syllogism produces a conclusion like the major premise [in modality], as was said before. And when it is true in the same way as the

major premise, then on the assumption that [the major premise] is possible, it [i.e. the conclusion] is possible. Otherwise what is not possible would be possible, given that the possible actually occurs, and this is absurd. The reason it is not an actuality [conclusion] is that the minor term [may] not actually fall under the middle term.

As for the two-sided possibility conclusion, [the conclusion follows the major premise in modality] because if the possibility [minor] is composed of one of the parts of the major premise, it produces a one-sided possibility conclusion. If, however, it is composed of another part different from this part in quality, then it will produce a conclusion different from the first conclusion; and from them the two-sided possibility is composed.

[T31] Al-Ḥillī, *Asrār*, 126.15–129.1

[***mixed modal syllogisms in the first figure***]

Each figure has [productivity] conditions additional to those we already mentioned, in consideration of the modalities without which no productivity could occur. There are 13 modal propositions if they are counted by themselves. From them 169 moods can be formed, but in each figure all those that do not satisfy the conditions mentioned are subtracted.

The first figure: here the later scholars stipulated that the minor must be an actuality premise. They said that otherwise, the minor term may not fall under the middle term, and so the judgment could not extend to the major term. Hence, 26 moods are subtracted and two possibility premises from the thirteen [productive modal propositions]. But some of the verifiers responded to this by saying: we do not concede that actually falling [under the middle term] is a condition for productivity. [127] As for the Master [Avicenna], he considered this figure to be productive on the assumption of the [mere] possibility of its minor premise.

For the major is either (a) necessary or (b) not. (a) In the first case, the conclusion is necessary too, because if the middle term does actually come to [fall under] the minor term, then the conclusion is necessary. So the necessity holds just on the assumption of possibility [for the minor term]: it holds in itself (*fī nafs al-amr*), because what is not necessary cannot turn into something necessary [just] by assuming something possible. (b) In the second case it is (b1) a one-sided possibility [conclusion] if the major premise is incomposite, because

assuming the minor term to occur, the conclusion is either a one-sided possibility [proposition], if the major premise is a one-sided possibility, or (b2) an actuality [proposition], if the major premise is an actuality premise. On either assumption it will be a one-sided possibility. Otherwise, what is not a one-sided possibility in itself, would become a possibility assuming that something possible occurs, which is absurd. (b3) Finally, it is a two-sided possibility if the major premise is composite, because of the ordering of the minor premise together with its two parts, so that both extremes are productive, in which case the two-sided possibility is true.

They asserted that there is no proof needed for [syllogisms] with a possibility minor. But those with an actuality minor do need a proof, as we mentioned. And it is allowed that the minor premise be negative, because it can be transformed into an affirmative: the affirmative is productive, and then it is turned into a negative. [Also it's allowed] to have both [premises] be negations.

The later scholars said: on the assumption that the possible actually occurs, there are further instances falling under the subject-term of the major premise, but the remaining ones are not implied in this case. Yet they fall into that which they sought to avoid, for they only resorted to this cunning strategy to guard against the implication that the actual occurrence of the possible yields something inconceivable, and they allowed the necessity major to be false, on the assumption that the possible actually occurs. But this is just to assert the implication of the possible, which is absurd in itself.

Some of the verifiers explained the necessity conclusion by the converse of [the proposition] "everything that is not necessary [128] on account of its essence is impossibly necessary on account of itself." They claim that the necessity premise in this argument is the contraposition of "everything that is not impossibly necessary is necessary." They also say that the essence of the minor term is the essence of the middle term, otherwise it would be impossible to ascribe possibility to it. So what is judged regarding the essence of the middle term is the same what is judged regarding the essence of the minor term. Now, they deny the latter and leave it at that. But the essence of the minor term is not the same as the essence of the middle term *in actuality*, but only *possibly*. Hence, the judgment regarding the middle term does not imply the unity of the two essences in actuality, except if the judgment is one of actuality.

You should know that, according to the rules set out by Abū Naṣr [al-Fārābī], the productivity of such cases was deemed to be evident. Yet suspicions persisted.

Some of the first [logicians] sought to prove the productivity of two possibility premises by saying that the major term is possible for the middle term, which in turn is possible for the minor term; and what is possible for something possible, is itself possible. But the Master [Avicenna] said that this is not a proof, for what is to be proven is assumed alongside it. Rather, [according to him] the truth is that the fact that its conclusion necessarily follows is clear, and there is no need for such a proof.

The later scholars said: the major term is possible for what falls under the middle term, and the description of the middle term is possible for the minor term, so there is no identity [between the two terms, i.e. the middle term is not used in the same sense]. But they shy away from verification, and simply give up the discussion.

Some of the later scholars made [syllogisms] with perpetuity majors and possibility minors productive of a perpetuity conclusion, based on what we have mentioned regarding necessity. But this is of no help, for what is not necessary cannot become necessary just on the assumption of something possible. As for the perpetual, it could then wind up being no longer perpetual on the assumption of the possible. [129] Or at best, the perpetuity would be made a concomitant of necessity, as one group indeed has held.

CHAPTER 11

Hypothetical Syllogistic

Aristotle's logic, whose reception in Avicenna and his heirs we have been charting in the previous chapters, is a *predicative* logic (or "categorical" logic: as we have noted, *kategorein* means "to predicate"). That is, it studies propositions and their combinations, where the propositions in question have the form "P is said of S," where P is a predicate and S a subject. One can analyze a wide range of arguments in this kind of logic, including of course the arguments that satisfy Aristotle's requirements for demonstration as laid out in the *Posterior Analytics*. But many valid arguments have a structure that cannot be captured as categorical syllogisms. Perhaps the most obvious are *modus ponens:*

If A, then B; and A; therefore B

and *modus tollens*:

If A, then B; but not-B; therefore not-A

Here the first premises are *hypothetical*. One can also concatenate hypothetical propositions to produce an argument that looks perfectly valid:

If A, then B; and if B, then C; therefore if A, then C

Hypothetical arguments belong to what is called "propositional" logic, which was developed in antiquity by the Stoics. This sort of logic studied other argument forms too, for example disjunctive syllogisms (Not both A and B; but A; therefore B).

Aristotle already made some remarks that might suggest a reduction of hypothetical arguments to categorical ones [T1].[1] And later Aristotelians did try to incorporate such inferences.[2] For instance members of the Baghdad school recognized the validity of *modus ponens*, *modus tollens*, and disjunctive syllogisms. But Avicenna went further than any of his predecessors by systemat-

1 See further D. Ebrey, "Why Are There No Conditionals in Aristotle's Logic?" *Journal of the History of Philosophy* 53 (2015), 185–205.

2 In fact, not just Aristotelians: see S. Bobzien, "Peripatetic Hypothetical Syllogistic in Galen," *Rhizai: Journal for Ancient Philosophy and Science* 1 (2004), 57–102.

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ically combining predicative and propositional logic within a single system.[3] He supposed that Aristotle had written a work on the hypothetical syllogism that had not survived [T3], a suggestion dismissed as implausible by Abū al-Barakāt [T8].[4] That left Avicenna to figure out things largely for himself, as he was keenly aware. He critiqued an earlier scholar, apparently al-Fārābī, for his inadequate treatment of hypotheticals [T2].[5] (For both this and the supposedly lost work of Aristotle, see also [T25].) As Avicenna says in his criticism of al-Fārābī, there was both need and opportunity to unify the treatment of hypothetical and categorical propositions, because the same quantifications can be applied to both. For instance just as one can say "Always, P is said of S" or "Necessarily, P is said of S," so one can say that "If A, then B" holds always, or holds necessarily. He observed that in general, the combinations of quantified propositions carry over from categorical to propositional logic [T4].

Avicenna made two further distinctions that allowed him to generate a taxonomy of hypothetical syllogisms. First, a contrast between two types of arguments: combinatorial (*iqtirānī*) and reiterative (*istithnā'ī*) syllogisms [T5]. The difference here is that the latter involve "reiterating" or repeating an element from the first premise in the second premise, whereas the former do not. For example *modus ponens* is reiterative. Second, a contrast between two kinds of hypothetical premises: conditional (*muttaṣila*: If P then Q) and disjunctive (*munfaṣila*: either P or Q). Remembering that there are also categorical propositions to consider, there are five ways to combine types of proposition to get "mixed" syllogisms:

Conditional-conditional
Disjunctive-disjunctive
Conditional-disjunctive
Categorical-conditional
Categorical-disjunctive

These five types are laid out by Bahmanyār [T6] and discussed in detail by al-Kātibī [T20] [T21], who also breaks them down into sub-types where appro-

3 N. Shehaby, *The Propositional Logic of Avicenna* (Dordrecht: 1973).

4 For traces of this supposedly lost book, see Di Vincenzo, "The Missing Logic: Traces of a Lost Book On Hypothetical Syllogistic in Avicenna's *Risāla Mūğaza fī Uṣūl al-Manṭiq*," *Arabic Sciences and Philosophy* 33 (2023), 55–81.

5 For arguments that this is a reference to al-Fārābī, see T. Street, "'The Eminent Later Scholar' in Avicenna's Book of the Syllogism," *Arabic Sciences and Philosophy* 11 (2001), 205–218. Note that the author is identified as al-Fārābī in [T24] below.

priate. This was the easy part. The difficult part would be to work through the formidable number of possible combinations—bearing in mind both quantification and the option of mixed syllogisms—to determine which are productive and which sterile. Since doing this completely would be a truly mammoth task, al-Sāwī undertakes to treat only the more "natural" or intuitive productive syllogisms falling under all five kinds [T7]. Al-Rāzī provides a parallel discussion [T9]; see also the options laid out by al-Abharī [T13].

As with other areas of post-Avicennan logic, al-Khūnajī's *Kashf al-asrār* raises important questions bearing on hypothetical syllogisms. We can begin with [T10, T11], where al-Khūnajī doubts that one can infer from an exclusive disjunction:

Either A or B (but not both)

the following conditional:

If A, then not-B

He argues that this inference is good only if the disjunction is not "coincidental," which introduces us to another important contrast. Our texts regularly distinguish between the implicative (or "non-coincidental": *luzūmī*) and the coincidental (*ittifāqī*),[6] where the former involve a necessary connection and the latter do not. Thus, as al-Khūnajī observes in [T10], "Either two is a quality or fire is hot" is a true proposition. Yet one cannot truly infer from it that, if two *were* a quality, then fire would stop being hot. Al-Urmawī considers combinations of coincidental and non-coincidental premises and says that the only combination that is not worth considering is where two coincidental premises are joined together [T23].

That example of two being a quality brings us to the issue of impossible assumptions, which are of interest to al-Khūnajī throughout his logic. Avicenna had already introduced the problem in his *Qiyās* (240),[7] considering the conditional proposition "If five is even, then five is a number." He allows that such impossible antecedents may be introduced for the sake of dialectical disputation. For instance when he is refuting proponents of the void he says things like, "If void exists, then it is an extension," a proposition with an impossible

6 On this terminology see K. El-Rouayheb, "Impossible Antecedents and Their Consequences: Some Thirteenth-Century Arabic Discussions," *History and Philosophy of Logic* 30 (2009), 109–125, at 211.

7 For the passage and further discussion see El-Rouayheb, "Impossible Antecedents," 213.

antecedent since void cannot exist. One might then go on to show that the consequent is false, so as to refute the proponents of void using *modus tollens* (cf. [T18] for the example). But impossible assumptions would, for Avicenna, play no role in positive science. Al-Khūnajī ignores the issue about dialectical use, and becomes interested in what would follow from an impossibility just as a matter of logic [T12].

The same issue attracted the attention of al-Abharī, whose remarks on this topic are quoted and discussed by al-Ṭūsī [T18, T19]. Al-Abharī was worried about problems of the following sort. Suppose we have the conditional:

(P1) If five is even, then five is a number

This looks true, though we might capture the intuition underlying it by rephrasing in counterfactual terms ("if five were an even number, then five would still be a number": put in this way, it even looks like a tautology). Yet we can combine it with the following, even more plausibly true conditional:

(P2) If five is a number, then five is odd

Applying the argument scheme If A then B, and if B then C, we get the absurd conclusion:

If five is even, then five is odd

Something must have gone wrong here, since we shouldn't be able to infer a contradiction from true premises. Al-Abharī's diagnosis is that the first conditional (P1) is true as a matter of conceptual truth (again the terminology is that it holds as "non-coincidental," *luzūmī*), whereas the second conditional (P2) is true only as a matter of fact (*fī nafs al-amr*). If the antecedent in (P1) were in fact true, then (P2) would stop being true. This solution is accepted by e.g. al-Urmawī at the end of [T23]. And al-Ṭūsī observes at the end of [T18] that the solution could be applied to hypothetical arguments involving disjunctions, too. But in [T19] he traces the problem to a different source: one should not be trying to make any inferences involving an impossible assumption like "five is even." He makes the same point in [T17]: an absurdity does not imply contradictory propositions, as al-Abharī had claimed, but in fact implies nothing at all (as opposed to saying that it implies *anything whatsoever*, an idea found in medieval Latin logic). Al-Ḥillī makes the same point [T27], and replies to al-Abharī's solution in [T28]. Al-Samarqandī says, by contrast, that we need to make inferences involving impossible assumptions (he gives the example of

assuming that the void exists in order to do a *reductio* argument against the possibility of void). So he proposes that conditionals with impossible antecedents do not convert to particular affirmative conditionals: for example, "if P and not P, then P" does not convert as "sometimes, if P, then P and not P."[8]

Now, even where there are no impossible antecedents involved, some logicians worried that valid-looking arguments made up entirely of hypotheticals may not actually be productive, because it may be that the conditional inference in one premise is blocked once one assumes the antecedent in the other premise. This may be the case when the antecedent in one premise is incompatible with the consequent of the other. Consider:

> Whenever the wolf population increases, few hunters shoot deer
> Whenever few hunters shoot deer, the deer population increases
> Whenever the wolf population increases, the deer population increases

The premises seem both true, but the conclusion does not. The problem here may be one of context-sensitivity: an increasing wolf population, leads, all things being equal, to a decreasing deer population, so that the first antecedent blocks the second consequent.

Al-Abharī, for example [T14, T15], argues that these kinds of wholly hypothetical syllogisms are not productive in the same way as their categorical counterparts. Instead of concluding in a conditional, he thinks that the result of such a syllogism will merely be a disjunction [T16]. Al-Ṭūsi responds to this in [T19], arguing that the syllogism will be valid as long as the premises hold in exactly the same way; if they do not then there is only an apparently shared middle term. Ibn Wāṣil [T24] rejected al-Abharī's position, arguing that the quantifier "whenever" ranges over all possible situations with which the antecedents are compatible.[9]

Finally, we mention that another problem was raised concerning syllogisms made up only of hypothetical premises. On this kind of syllogism and the question of complete or incomplete middles, see al-Kātibī's discussion in [T22]. An "incomplete middle" occurs when e.g. the consequent of one premise is "A is C" and the antecedent of the other premise is "A is B," so that we have partial overlap between the categorical propositions that have been made part of a hypothetical inference.

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8 Our thanks to an anonymous referee for this point.

9 See K. El-Rouayheb, "Mixed Conditional-Categorical Syllogisms from Avicenna to Urmawi," *History and Philosophy of Logic* 43 (2022), 232–250, as well as the introduction to K. El-Rouayheb, *Ibn Wasil: Commentary on the Jumal on Logic by Khunaji*. (Boston: 2022).

Texts from: Aristotle, Avicenna, Bahmanyār, al-Sāwī, Abū l-Barakāt, al-Rāzī, al-Khūnajī, al-Abharī, al-Ṭūsī, al-Kātibī, al-Urmawī, Ibn Wāṣil, al-Samarqandī, al-Ḥillī

[T1] Aristotle, *Prior Analytics*, 47ª22–41 [trans. Striker, mod.]

[*Aristotle on reducing hypothetical arguments to categorical arguments*]

In some arguments it is easy to see what is missing, but others escape our notice and appear to be proper syllogisms because something necessary results from the assumptions. For example, if one had assumed that a substance will not be destroyed when a non-substance is destroyed, and that when the constituents of a thing are destroyed, what consists of them is also destroyed—when these things have been laid down, it is necessary indeed that the part of a substance should be a substance, but this has not been deduced from the assumptions; some premises are missing. Again, *if what is a man is necessarily an animal, and what is an animal, a substance, then what is a man is necessarily a substance*. But this has not yet been deduced, for the premises are not related as we said. We are deceived in these cases because something necessary results from what is laid down, and the syllogism too is something necessary. But necessity extends beyond the syllogism, for while every syllogism is necessary, not everything that is necessary is a syllogism. Thus, if something results from certain assumptions, one should not try to reduce it right away, but first find the two premises, then divide them into their terms, and take as middle term the one that is said in both premises; for that the middle term occurs in both premises is necessary in all the figures.

[T2] Avicenna, *Shifāʾ, Manṭiq, Qiyās*, 356.7–357.15 [trans. Di Vincenzo, mod.]

[*Avicenna on the faulty hypothetical syllogistic of an anonymous author*]

We have presented the concise discussion of hypothetical propositions, and the syllogisms made from them, included [in this book]. Now, in our region (*bilād*) we had become acquainted with a lengthy, extended book on this subject, but then lost track of it during our travels, having to move around to attend to our affairs. It might still be in that region where we were. After we figured out this part of the science for just about eighteen years, we came across a book on hypotheticals ascribed to an eminent later [scholar] (*fāḍil al-mutaʾakhkhirīn*). However, it appears to be spurious, as it is neither clear nor reliable. It does not

get to the bottom of the topic, nor does it achieve what it sets out to do. It is defective in its definition of the hypothetical proposition itself, in many things it carries forward from [the discussion of] syllogisms, and when it comes to the types of proof for their productivity and sterility, as well as in the enumeration of moods and figures. The student should under no circumstances turn to that [book], for it is deviant and misleading. For its author does not understand affirmation and negation in hypotheticals, nor how universal, particular, or unquantified forms work, nor how contradiction works for hypotheticals, nor their conversion or subalternation. Rather [357] he just adds all this to the parts of conditionals, and uses the converse of a hypothetical in one manner only. Nor does he understand any of the connective [syllogisms]: he deals with them only as combinations of conditionals and disjunctions, rather than postponing them all [to a dedicated discussion], and reckons them as more numerous than necessary, because he treats a number of things falling under a single judgment as being like things that should have different judgments. What one should do is to apply the universal judgment to them: it is enough then to multiply their types on account of the numerous changes made to the antecedent and the consequent, with different quantities and qualities. But the [universal] judgment does not change when those are changed. Moreover, he thought that many of the sterile syllogisms are in fact productive, especially the first one he enumerates[10] in the book. And he considered many of these sterile syllogisms to be evidently productive, and that these syllogisms need no proof of their perfection. Conversely, he thought that many of the productive syllogisms are sterile. Then too, he did not succeed in showing that many of the productive syllogisms can be shown to be productive, but followed [proof] procedures that are not valid. And he thought that in a disjunction, the consequent is specified by the antecedent, so that a number of compositions are now in one figure, now in another, because in one of the two the shared element comes first, whereas in the other it comes last. Moreover, he thought that many connective syllogisms, in which there is no middle term given as such, are simple syllogisms, because something follows from them thanks to there being a single middle term potentially. But this applies only to the case of compound syllogisms, because a simple syllogism must have a single middle term in itself without fail. These things and similar ones are some aspects in which [the author] in this book is simply wrong.

10 Reading *yā'* for *bā'* at the beginning of the verb.

[T3] Avicenna, *al-Mūjaz fī l-manṭiq* [trans. Di Vincenzo, mod.], 78[11]

[*Avicenna on hypothetical syllogistic*]

One of those who intended to provide an account of hypotheticals believed that the conditional [premise] is affirmative, while the disjunctive is negative, but he made a huge mistake, for the negative removes the affirmative. Then if someone says: "If this is the case, then that is the case," whoever denies and refutes [this claim] does not oppose it by a disjunctive. Rather, he says: "Not: if this is the case, then that is the case", thus removing the implication. [...] Besides not adding, with regard to hypothetical [propositions] and the syllogisms that are formed of them, anything but prolixity to what people [already] had, that man [also] made a huge mistake concerning things similar to those I have mentioned. The reason for this is that people have lost a work by the Philosopher [viz. Aristotle] on hypothetical [propositions]. As for us, we have already discovered, concerning the states of their propositions and the composition of syllogisms out of them [i.e., out of hypotheticals], what we hope to have thoroughly examined in a long book we have composed; here, however, we seek brevity.

[T4] Avicenna, *Ishārāt, Manṭiq*, 157.3–159.2 [trans. Inati, mod.]

[*the combinatorial hypothetical syllogism*]

We will mention some of these [syllogisms], leaving aside the ones that are not grasped by us naturally, after having treated all of them sufficiently in *al-Shifā'* and elsewhere. We say that among the conditional combinatorial syllogisms, three figures may be formed, as with the figures of the categorical syllogisms. They have in common either a consequent or an antecedent, and they differ in a consequent or an antecedent, just as the figures of the categorical syllogisms have in common a subject or predicate, and differ in a subject or predicate. Now, the rules (*aḥkām*) governing these figures are the same as those governing the categorical ones. [158] An element may be shared between a categorical proposition and a disjunctive one, as when you say "Two is a number, and every number is either even or odd." From what has preceded it is easy to infer the rules for this. Also a disjunctive proposition and a categorical one may share an element, as when you say the following: "Let A be either B, C, or D; and every

11 The paragraph is edited (page 78) and translated (79) in Di Vincenzo, S. (2023). The Missing Logic: Traces of A Lost Book on Hypothetical Syllogistic in Avicenna's *Risāla mūǧaza fī uṣūl al-manṭiq*. *Arabic Sciences and Philosophy*, *33*(1), 55–81.

B, C, and D is E; therefore, every A is E." From what has preceded, it is easy to infer the rules for this too.

Further, a conjunction may be formed of a connective conditional proposition and a categorical one. Of this the most natural case is where the categorical proposition shares the consequent with the affirmative conditional, in one of the ways in which the categorical propositions share the predicate. But then the conclusion is a connective [i.e. a conditional], whose antecedent is the same as that one [i.e. the antecedent in the conditional premise], and whose consequent is the conclusion of the composition of the consequent which was conjoined in the categorical proposition. For instance: "If A is B, then every C is D, and every D is E," from which it follows that "If A is B, then every C is E." It is up to you to enumerate the rest of the divisions from what you already know. This combination may also be of two conditional propositions, each of which shares the consequent of the other, if [159] that consequent is also a connective; and its syllogism is the same as that one. A complete discussion of conditional connective syllogisms is not appropriate in a summary like this.

[T5] Avicenna, *Ishārāt, Manṭiq,* 159.12–160.16 [trans. Inati, mod.]

[*the reiterative hypothetical syllogism*]

A reiterative conditional syllogism is either:

(a) One in which there is a conditional, and what is repeated is either the same as its antecedent, giving the consequent itself as a conclusion. For example: "If the sun is up, then the stars are hidden; but the sun is up; therefore, the stars are hidden." Or the contradictory of its consequent, thus giving the contradictory of the antecedent as a conclusion. For example: [160] "… but the stars are not hidden," yielding the conclusion "therefore, the sun is not out." Nothing other than this follows as a conclusion.

(b) One in which there is a strict disjunctive proposition [i.e. an exclusive disjunction], and what is repeated is whichever part of the disjunction, yielding the contradictory of the other parts as a conclusion. For example: "This number is either perfect, excessive, or deficient; but it is perfect." Thus, the conclusion is the contradictory of the remaining parts [i.e. "therefore the number is not excessive or deficient"]. Or, what is repeated may be the contradictory of whichever part of the disjunction, yielding what remains—be that one or more parts—as a conclusion. For example: "… but it is not perfect, therefore,

it is either excessive or deficient." And so on, until the repeatable elements are exhausted, and one option will remain [e.g. if one added that the number is not excessive, it would remain only that it is deficient].

(c) One in which there is a non-strict disjunctive proposition, in which both disjuncts may be true [but not jointly false]. Repeating the contradictory of [one disjunct] renders the other [disjunct] itself as the conclusion. For example: "Either he is in water or he is not drowned; but he is drowned; therefore, he is in water" or alternatively "… he is not in water; therefore, he is not drowned." Another example: "either this is not an animal, or this is not a plant; but it is an animal; therefore, it is not a plant," or alternatively "… it is a plant; therefore, it is not an animal." Or the disjunctive proposition might be of the type in which neither disjunct may be true, but it permits the negation of all the parts together. Some have called this the "incomplete disjunction" or "conflicting." Repeating a part of it yields only the contradictory of the rest. For example if you say: "Either this is an animal, or this is a tree," in answer to someone who says, "This is both an animal and a tree."[12]

[T6] Bahmanyār, *Taḥṣīl*, 138.7–140.9

[***the types of hypothetical syllogisms***]

On the number of combinatorial syllogisms productive of conditionals [*as their conclusion*]*, and of combinatorial syllogisms consisting of conditionals and categoricals that are productive of categoricals* [*as their conclusion*].

Any such combination falls either (a) into two conditionals, or (b) two disjunctions, or (c) one categorical and one conditional sharing the antecedent, or (d) one categorical and one conditional sharing the consequent, or (e) one categorical and one disjunction, or (f) one conditional and one disjunction.

(a) Concerning the combination established between conditionals, its conclusions are conditional hypotheticals. But this is so only if they share amongst them a complete part—by which I mean an antecedent or a consequent—or an incomplete part—by which I mean part of an antecedent or part of a

12 Note that since Avicenna, hypothetical premises have been understood as quantified: in a conditional, the universal quantifier ranges over all possible situations, so that the conditional is true if the consequent follows from the antecedent in all cases in which the antecedent can possibly occur. A particular conditional is true if the consequent follows in some cases in which the antecedent can possibly occur.

consequent. But let us postpone the discussion of this last sort, because its properties are the same as those of the combination established between a conditional and a categorical. So let us begin with that.

(a1) If the shared element is a complete part, then it may be the antecedent in one of the two premises and the consequent of the other, for instance:

> Whenever A is B, then J is D
> Whenever J is D, then H is Z

This [139] resembles the first figure in categorical syllogisms, and the way it is productive, as to the moods and conditions for productivity, are just like in the first figure.

(a2) The shared element between them may also be in the consequent, like when you say:

> Whenever A is B, then J is D
> Not: if once H is Z, then J is D

This is like the second figure in categorical syllogisms, and the situation regarding its productivity is the same as with categorical syllogisms.

(a3) Or the shared element may be in the antecedent, like when you say:

> Whenever A is B, then J is D
> Whenever A is B, then H is Z

the moods of this are like the moods of the second figure in categorical syllogisms. And the form of the conclusion in the second figure, for example, is like this:

> Not: If A is once B, then H is Z

In the third figure it is

> If A is B, then H is Z.

(b) As to the combination established between disjunctions, this kind of combination cannot possibly have a complete part, but only part of the consequent

or the antecedent. In this case they are [formed] according to the following example:

> Either this number is even [i.e. a pair][13] or it is odd

Then we take "is a pair" as the middle term (it being an incomplete part), and put it together with the parts of the disjuncts in the second disjunction, and say:

> Every even [thing] is either a pair of even [things], a pair of odd [things], or a pair of even and odd [things]

And from this it follows:

> Therefore, every number is either odd or a pair, that is, of evens, of odds, or of an even and an odd

As for the productivity conditions, they are that the minor premise (which is like the first affirmative disjunction) [140] be either particular or universal, and that the shared element in it is affirmed, while the disjunction in the major premise is universal.

There are twelve combinations in which the minor premise necessitates something together with the major premise. For the major premise is either negative, and its parts are negated, or negative and its parts are affirmed, or negative and some of its parts are negative and some of its parts affirmed. Or else it is affirmative, with the same three options. This makes six possibilities, which are further divided into two divisions, namely that the major premise is particular and the minor premise universal, or the minor premise particular and the major premise universal, like the last example:

> Either A is B or A is J
> Never: J is D or J is H
> Therefore: Either A is B, or it is not the case that A is either D or H

13 It is difficult to render the Arabic here, because the word for even also means "a pair": *kull zauj zauj al-zauj aw zauj al-farḍ aw zauj al-zauj wa l-farḍ*.

[T7] Al-Sāwī, *Baṣā'ir*, 165.21–168.23

[*focus on the more intuitive hypotheticals*]

The [connective element in a hypothetical] combination either falls between two conditionals, or between two disjunctions, or between a categorical and a conditional—where the shared element may be the antecedent or the consequent—or between a categorical and a disjunction, or between a conditional and a disjunction. We don't deem it advisable to provide a thorough discussion of all these combinations, as some of them are rather unnatural (*baʿīd ʿan al-ṭabʿ*) and trying to prove their productivity can only be done with a lot of effort, and it is not fitting for summaries like this to present such tedious things. So let us focus on what lies closer to hand for someone of sound nature, in terms of its productivity. But if someone wishes to go through all the possible combinations and their productivity and sterility, let him seek out one of the books by the most eminent of the later logicians, who independently worked out most of their judgments and distinguished the productive from the sterile cases [166] as no one had done before. If God grants me a long enough life for it, I will dedicate an entire book to these combinations, both the familiar and the unfamiliar.

[*wholly hypothetical syllogisms composed of two conditionals*]

Concerning the combinations between conditionals, the productive ones among them are those that share between their premises a complete part, that is, in the antecedent or in the consequent. In this case the three figures composed from them are like the figures in categorical syllogisms, because either the shared element between them is the consequent in one of them and the antecedent in the other, and then it is the first figure; or the consequents of both premises together and then it is the second figure; or both antecedents, and in that case it is the third figure. One should also consider here the conditions for productivity of the categorical syllogisms where the minor premise is an affirmation and the major is universal, in the first figure; and where the major premise is universal and one of the two premises is negated, in the second figure; and where the minor premise is an affirmation and one of the two premises is universal, in the third figure; in all these cases the conclusion is a conditional. With two universal or two particular [premises], the first figure is productive; the second is not productive except with a negation; and the third is not productive unless its major premise is particular. All share the property that there is no syllogism if there are two particular quantified premises or two negations, or if the minor premise is negated and the major premise particular. […]

[***wholly hypothetical syllogisms composed of two disjunctions***]

[166.17] Concerning the combinations between disjunctions, a syllogism cannot be composed from strict disjunctions except when an incomplete part is involved, either in the consequent or the antecedent. Its natural form is like the form of the first figure. Its productivity conditions are that the minor premise (which can be particular or universal) is affirmative; that the shared element is affirmative; and that the major premise (which can be negated or affirmed) be universal. [...]

[***mixed categorical-conditional syllogisms***]

[166.23] Concerning the combinations established between a conditional and a categorical, they are more natural. Here an element is shared between the consequent of the conditional and the categorical (not between the latter and the antecedent). Furthermore, we put the categorical first, in the place of the major premise. From this three figures can be composed:

First: if they share an element in the predicate of the consequent and the subject of the categorical, then its productivity conditions are that, if the conditional is affirmative, the consequence must be affirmative and the categorical universal, as is the case in categorical syllogisms. The conclusion is a hypothetical whose antecedent is the antecedent of the conditional and whose consequent is that which would follow as a conclusion from the consequent and the categorical on their own. [...]

[167] *Second*: if they share an element in the predicates of the consequent and the categorical, then the productivity conditions are that if the conditional is affirmative, as is the case in the second figure of categorical syllogisms, the major premise is universal and the categorical or the consequent is negated. [...]

Third: if they share an element in the subjects of the consequent and the categorical, the productivity conditions are that if the connective conditional is affirmative as is the case in the third figure of categorical syllogisms, the consequent is affirmative and one of the two premises is universal. [...] if it is negated then we have three other figures that are less natural, so we won't mention them. [...]

[***mixed categorical-disjunctive syllogisms***]

[167.13] Concerning the combination between a disjunction and a categorical, if the categorical is the minor premise then this is more natural, and it follows the same pattern as in the first figure. This means that the categorical is affirmative and its predicate is the subject of the parts of the disjunction all together, where the disjunction is universal. […]

[***mixed conditional-disjunctive syllogisms***]

[168.10] Concerning the combination between a conditional and a disjunction, either this involves a complete part, in which case the conditional must be the minor premise and the disjunction the major premise, and the disjunction must be affirmative and [at least] one of the two premises has to be universal; if they are not both universals, the conclusion will not be universal. One may say that the conditional is productive and that the disjunction is productive. […] [168.15] Or [the combination may] involve an incomplete part, in which case it will naturally be that the predicate of the consequent is the subject in the parts of the disjunction, and the consequent will be a universal affirmative. The disjunction is productive on what remains of the consequent, and the conclusion will be a conditional of the disjunction of the consequent. For instance: "If this thing is multiple, then it has number; everything that has number is either even or odd," from which follows the conclusion, "if this thing is multiple, then it is either even or odd."

You should know that every possible combination between a categorical and a hypothetical may also be made between a conditional and that hypothetical so long as that part of the hypothetical is a conditional. Then what is affirmed is the element that is shared between this condition and premise and that part of the conditional that is either in the antecedent or the consequent. That's enough on the combinations of hypotheticals.

[T8] Abū al-Barakāt, *Muʿtabar*, vol. 1, 155.11–18 [trans. Street, mod.]

[***on Avicenna's and Aristotle's treatment of hypothetical syllogisms***]

Regarding syllogisms which are composed from hypothetical propositions, Aristotle only made mention of the reiterative ones (*al-istithnaʾiyyā*) in his book. What touches on connective [hypothetical] syllogisms, both pure, and mixed with categoricals, is clear from what he says, and the sound mind (*al-dhihn al-salīm*) will recognize them on the basis of what has been said. He

omitted mentioning them in his book, either due to the little benefit they have for the sciences (*li-qillat fā'idatihā fī l-ʿulūm*), such that he disliked the thought of dwelling on them (*fa-kariha l-taṭwīl bi-hā*); or because he relied on the fact that minds which have come to know the categoricals may conclude from them to [the valid connective syllogisms with hypotheticals as premises], so that you will recognize them from what you have come to know in the categoricals. Or [perhaps he omitted mention of them] for both [reasons]. A certain later scholar (*baʿḍ al-mutaʾakhkhirīn*) said that Aristotle had dedicated a book specifically to them, which had not been translated into Arabic. But this is baseless conjecture (*takhmīn lā ḥaqīqata lahu*). Had [Aristotle] wanted to mention them, why would he move them from here, their proper place? Anyway, there is not enough concerning them that would merit a separate book with separate principles and conclusions.

[T9] Al-Rāzī, *Manṭiq al-Mulakhkhaṣ*, 313.5–318.6

[***the five kinds of hypothetical syllogisms***]

First kind, composed of conditionals. The productive ones among [the first kind] are those which share a complete part. What is shared may be the consequent in the minor premise and the antecedent in the major, in which case it is the first figure. Or it may be the consequent in both [premises], in which case it is the second figure. Or it may be the antecedent in both [premises], in which case it is the third figure. Or it may be the antecedent in the minor and the consequent in the major premise, in which case it is the fourth figure. The conditions [for productivity] in consideration of these figures are exactly the same as the ones that were considered regarding categorical [syllogisms], so there is no point in enumerating them [again here]. You should know that these syllogisms are put to good use only when they have relations of implication, be they coincidental or not.

Second kind, composed of disjunctions. A syllogism cannot be composed from strict disjunctions, unless the shared term is an incomplete part. Its properties are the same as that of first figure syllogisms. Its productivity conditions are that the minor premise is affirmative and the shared part in it is likewise affirmative, and that the major premise is quantified as universal. For example:

> Either this number is even, or it is odd
> Every odd thing is either one or many
> Therefore: this number is either even, or one, or many

You know that this minor premise here may be quantified as universal or as particular, and the disjunction may be either affirmative or negative. Accordingly, it is either composed of affirmations or two negations or a mix between them.

Third kind, composed of a categorical and a conditional. If the shared element is with the antecedent and the categorical, then this is rather unnatural. If [315] it is with the consequent and the categorical, then the categorical is either the major premise, or the minor premise. If it is the major, then the conditional is either affirmative or negative. If it is affirmative, then the conclusion is a conditional whose antecedent is the same as the original antecedent, and whose consequent is the conclusion reached from the consequent of the conditional and the categorical. [...] [315.7] If it is negative, then the condition is that everything we express in a simple categorical as being affirmative, here has to be negative. For the negation of a negation is an affirmation and the conditions [for productivity] remain the same. An example of the first mood in the first figure is:

> Not: if once H is Z, then J is not D
> Every D is A
> Therefore: Not: if once H is Z, then not every J is A

Which is proved as follows: the conditional implies "whenever H is Z, then every J is D" and "every D is A," which concludes in "whenever H is Z, then every J is A." From this follows "Not: if once H is Z, then not every J is A." And you know how to extrapolate to other cases.

If the categorical is the minor premise, the above figures apply. If the conditional is affirmative, then the conditions between the categorical and the consequent are the same as have been mentioned. And if it is [316] negative, then the condition is that everything that we express in a plain categorical that is quantified as universal needs to be quantified as particular in the consequents that are being substituted here. This is because when the conditional is negative, it means a denial that if the antecedent [holds], then [so does] this particular. This requires the use of universal quantification, because withdrawing the particular presupposes that the universal obtains. And the remaining conditions are the same. An example for the first mood in the first figure is:

> Every J is B
> Not: if once H is Z, then not every B is A
> Therefore: Not: if once H is Z, then every A is J

This is shown by converting the conditional to the affirmative and then taking the implicand of the conclusion.

Fourth kind, composed of a categorical and a disjunction. If the categorical is the minor premise, then this is more natural, in accordance with the method for the first figure. Thus the categorical is affirmative and its predicate will be the subject of each of the parts of the disjunction, and the disjunction should be quantified as universal. For example:

> Every movable is a body
> Every body is either mineral, plant, or animal
> Therefore: every movable is either mineral, plant, or animal

[317] If the categorical is the major premise, then it consists of several propositions or a single one. If it is several propositions, then either they share a single predicate, or they do not. If they do, then its properties are the same as when we follow the method of the first figure. The disjunction and its parts must be affirmative and the categoricals quantified as universal; and the parts of the disjunction must be shared with the subject. For example:

> Every movable is either mineral, plant, or animal
> Every mineral, plant, or animal is a body
> Therefore: every movable is a body

If they do not share a single predicate, the conditions are still the same as we mentioned, but the conclusion is an exclusive disjunction. For it could be that all the predicates that are elements of the disjunction have a greater extension than [the conclusion] does. If the categorical is a single [proposition], then the conclusion is likewise an exclusive disjunction, because the predicate of that part could imply something with a greater extension than it, without negating its remaining elements.[14]

Fifth kind, composed of conditionals and disjunctions. In the strict disjunction the shared element is either a complete or an incomplete part. If it is [com-

14 For example:
> Every movable is either mineral, plant, or animal
> Every mineral, plant, or animal is animate or inanimate
> Therefore, every movable is either animate or inanimate

Here, the conclusion cannot be a universal affirmative categorical proposition like "Therefore, every movable is animate," because minerals are movable but not animate. Instead,

plete], then this is more natural, and the conditional is the minor premise while the disjunction is the major. And it is [318] affirmative with [at least] one of the two needing to be quantified as universal. Unless both premises are quantified as universal, neither will be the conclusion. Then, its conclusion may be turned into a conditional and a disjunction.

If it is [incomplete], then its properties are the same as those of the predicate of the consequent whose subject is among the parts of the disjunction and the universal consequent. The conclusion is in this case a conditional of the disjunction and the consequent.

This was a very abridged presentation of hypotheticals. A more elaborate treatment of them will appear, if God grants it, in the *Great Logic*.

[T10] Al-Khūnajī, *Kashf al-Asrār*, 410.6–411.10

[*doubts on the productivity of certain combinatorial hypothetical syllogisms*]

The following doubts concerning these syllogisms have been advanced.

First, that two affirmative disjunctions that are different in kind are not productive of a conditional, as you stated. *Proof*: given it is not incumbent on the debtor to give alms, it is true to say "Either it is incumbent on the rich or it is incumbent on the debtor," where it is ruled out that both [are true]. But it is also true to say "Either it is incumbent on the debtor, or it is not incumbent on both," where at least one [is true]. But then it follows that the following is also true: "Whatever is incumbent on both of them, is not incumbent on the rich." In this way, if it is incumbent on the debtor, then a disjunction is affirmed between the giving of alms not being incumbent on the debtor and its not being incumbent on the poor, where the disjunction is exclusive, so that the impossibility we mentioned follows. If the syllogism mentioned above were productive, then two contradictories would both be true, which is absurd.

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the conclusion is itself a disjunction. The same applies if one of the premises is a simple categorical proposition:

Every movable is either mineral, plant, or animal
Every animal is breathing
Therefore, every movable is either breathing, or a mineral, or a plant.

[411] *Second*, if it is incumbent on the debtor to give alms, then an exclusive disjunction is affirmed between the giving of alms that is incumbent on the debtor and its being incumbent on the poor; as is an exclusive disjunction between its being incumbent on the poor and the negation of its being incumbent of both. Hence [the syllogism] is productive of the conclusion "Whatever is denied of both is incumbent on the debtor." In this way, if it is incumbent on the debtor, then a disjunction, where at least one disjunct [is true], is affirmed between its not being incumbent on the rich and its not being incumbent on the debtor. Hence an impossibility follows, and the productivity leads to two contradictories jointly being true.

Third, if [giving] a quarter [of the tenth as alms] is incumbent on the debtor, then it is true to say: "Either a quarter is incumbent on the debtor, or a half," where at least one holds. This is not true unless it is true that "On whomever a quarter is not incumbent, on him a half is incumbent." In this way, if a quarter is not incumbent, then either a quarter is not incumbent, or a sixth is not incumbent. This, however, is not true.

[T11] Al-Khūnajī, *Kashf al-Asrār*, 413.9–414.2

[***reply to the doubts in T10***]

Given the assumptions that were made, the true disjunction is merely coincidental, and what is produced by the conditional is [only truly] opposed propositions. Coincidental premises do not yield conditionals [formed] with one of its extremes and the contradiction of the other. It may be true coincidentally [to say] "Always: either two is a quality or fire is hot," yet it does not follow that "Whenever two is a quality, fire is not hot" or "Whenever fire is not hot, then two is a quality." If it is claimed that given the assumptions, an oppositional proposition is implied, then we deny this, because what is known on these assumptions is that [the giving of alms] being incumbent is not jointly true for both. For its not being [414] incumbent on the debtor precludes its not being incumbent on the other, but its being incumbent on one of the two does not require its not being incumbent on the other.

[T12] Al-Khūnajī, *Kashf al-Asrār*, 371.3–13 [trans. El-Rouayheb, mod.]

[*rejection of Avicenna's solution to mixed conditional-categorical syllogisms*]

The Master [Avicenna] brought forth a question concerning this division [of the syllogism], namely that the categorical premise may be true in itself but not true along with supposing the antecedent [of the conditional premise] [...]

He answered this in two ways: *first*, that we may specify that we are speaking of cases in which they are both true and are not incompatible, by which he means that we suppose that we are speaking of cases in which there is no incompatibility between the categorical [premise] and the antecedent [of the conditional premise], rather they are both true. *Second*, to deny the impossibility of the consequent [of the conditional conclusion] on the basis that the impossible may follow from the impossible existence of the void. [...]

The first of the two responses mentioned by the Master calls for further inquiry, in my eyes. As for the second, it is a refutation of a specific counterexample and does not dispel the objection to the syllogism.

[T13] Al-Abharī, *Īsāghūjī*, 25.1–15

[*the combinatorial hypothetical syllogism*]

The combinatorial syllogism is either such that it is composed of two sentences as has been said, or of two conditionals, for example: "if the sun is up, then it is day; whenever it is day, then the world is lit"; this concludes in "if the sun is up, then the world is lit." Or it is such that it is composed of two disjunctions, for example: "every number is either even or odd; every even thing is either divisible into even things or divisible into odd things," which concludes in: "every number is either odd or even and divisible into even things or even and divisible into odd things." Or it is such that it is composed of a categorical and a conditional, for example: "Whenever this is a human, then it is an animal: every animal is a body," which concludes in "whenever this is a human, then it is a body." Or it may be such that it is composed of a categorical and a disjunction, for example: "every number is either even or odd; every even thing is divisible into equal parts," which concludes in "every number is either odd, or divisible into equal parts." Or it may be such that it is composed of a conditional and a disjunction, for example: "whenever this is a human, then it is an animal;

every animal is either white or black," which concludes in "whenever this is a human it is either white or black."

[T14] Al-Abharī, *Kashf al-ḥaqā'iq*, 155.7–156.3

[***on wholly hypothetical syllogisms with complete middles***]

First inquiry, regarding the widely accepted doctrines held by the Imām [al-Rāzī] and those before him. [Their view was] that if the middle term between the two premises is a complete part, then the number of productive moods in each figure are the same as in the categorical syllogisms, and their conclusions are conditionals. But this calls for further inquiry. Because if we say

> Whenever A is B, then J is D
> Whenever J is D, then H is Z

then the major premise signifies that the major term [i.e. H is Z] is implied by the middle term [i.e. J is D] in actual fact (*fī nafs al-amr*), while the minor premise signifies that the middle term is true when the minor term [i.e. A is B] is *assumed* to be true.[15] So it may be that this true implication in actual fact no longer applies, once the minor term is assumed to hold. This being so, we deny that the implication of the major term for the minor follows from the truth of the two premises. It only follows if the implication between the middle term and the major term remains valid once that assumption is made. So then, why have you said that it remains valid on this assumption? The upshot of this argument is that whenever J is [156] D, then H is Z in actual fact; but J is D on the assumption that A is B, so that H is Z only on that assumption, too. It is well known that this [combination] is not productive. If you simply say that the implication is affirmed on this assumption, then we deny this: it needs a proof.

[T15] Al-Abharī, *Kashf al-ḥaqā'iq*, 156.5–157.12

[***on wholly hypothetical syllogisms with incomplete middles***]

Second inquiry, regarding what was said about [wholly hypothetical syllogisms] in which both conditionals have an incomplete middle term. Al-Kashshī said:

15 That is, the minor premise's being true requires that either the consequent is true, or both the antecedent and consequent are false. But if both are false then no implication goes through.

the middle term may be shared (a) between the two consequents, or (b) between the antecedent of the minor premise and the consequent of the major premise, or (c) vice-versa, or (d) between both antecedents.

(a) *Concerning the first case*, the number of productive moods in each figure is twice the number [of productive moods] in categorical syllogisms, because the minor premise may be quantified either as universal or particular. He also claimed that its conclusions are evident. The first mood in the first figure is thus:

> Whenever A is B, then every J is D
> Whenever H is Z, then every D is T
> Therefore: Whenever A is B, if H is Z, then every J is T

You can do the same for all remaining moods and figures.

But this calls for further inquiry. *For we say*: we don't concede that the implication in the major premise will hold on the assumption that A is B remains valid, so that it will imply the truth of the above conclusion [cf. the objection in T14 above].

(b) *Concerning the second case*, he claimed that it is productive, because it may be reduced to the first case by converting the minor premise. The number of productive moods in each figure is thus the same as in the first case. The first mood in the first figure is thus:

> Whenever J is D, then A is B
> Whenever H is Z, then D is T
> Therefore: If A is B, then: if H is Z, then every J is T

[157] But we deny that the converse of the conditional is implied. And even on the assumption that the converse is implied, we deny that it is productive. The rejection is based on [the same argument that] you know already.

(c) *Concerning the third case*, he claimed that it is productive by converting the major premise. But this is utter nonsense! For if the major premise is converted, it comes to be quantified as particular, and as such can no longer serve as a major premise. [...]

[157.9] (d) *Concerning the fourth case*, it is not possible to use conversion for it. If we say:

Whenever every J is D, then A is B
Whenever every D is T, then H is Z

and then we convert the two premises, then they become:

If once A is B, then every J is D
If once H is Z, then every D is T

But they are both particular and thus they are not productive.

[T16] Al-Abharī, *Kashf al-ḥaqā'iq*, 158.20–162.18

[*Abharī's own position on the productivity of wholly hypothetical syllogisms*]

Third inquiry, on the productivity conditions of non-coincidental conditionals, according to our own opinion.

The middle term of two premises is either (a) complete or (b) incomplete [in both], or (c) complete in one and incomplete in the other.

[159] (a) *Concerning the first case*, the productive moods are the first mood in the first figure and the first mood in the fourth figure. The conclusion in the first is an exclusive disjunction composed of the contradictory of the antecedent [as it appears] in the minor premise and the consequent as it appears in the major premise. For example:

Whenever A is B, then J is D
Whenever J is D, then H is Z

always concludes either to:

A is not B, or H is Z

[where the disjuncts are exclusive], because this follows from the minor premise, or to:

A is not B, or J is D

[where the disjuncts are again exclusive]. Here the exclusive [disjunction] together with the major premise, if A is not B, leads to what was sought. If J is D, it follows that H is Z, and thus leads to what was sought.

The conclusion in the fourth figure is an exclusive disjunction composed of the consequent as it appears in the minor premise, and the contradictory of the antecedent [as it appears] in the major premise. This is proven by conversion.

(b) *Concerning the second case*, here the two premises inevitably have to be affirmative and quantified as universal, and the [middle term] is shared between (b1) the two consequents, or (b2) the two antecedents, or (b3) the consequent of the minor premise and the antecedent of the major premise, or (b4) vice-versa.

(b1) As for the first [sub-]case, a condition for its productivity is that it must contain the two consequents in each figure according to the composition productive in that figure. The conclusion is an exclusive disjunction, and the number of productive moods in each figure is the same as in categorical syllogisms. The first mood in the first figure is:

> Whenever A is B, then every J is D
> Whenever H is Z, then every D is T

which always concludes in:

> A is not B, or H is not Z, or every J is T

This is because the minor premise implies either "A is not B" or "every J is D," and the major premise implies either "H is not Z" or "every D is T"—each of which are understood as exclusive disjunctions—and they produce the intended conclusion, because [160] the first disjunction being true, if A is not B, this leads to what was sought. If every J is D, then this being true together with the major premise, if H is not Z, leads to what was sought as well. If every D is T, and the following is true:

> Every J is D
> Every D is T
> Therefore: every J is T

then this leads to what was sought as well. You can do the same for the remaining moods and figures.

(b2) As for the second [sub-]case, a condition for its productivity is that it contains the two contradictories of the two premises in each figure according to the composition productive in that figure. The conclusion is an exclusive disjunction composed of the two consequents and the composition of the contradictories of both premises. The number of productive moods in each figure is the same as in categorical syllogisms. The first mood in the first figure is:

> Whenever not every J is D, then A is B
> Whenever not every D is T, then H is Z

which always concludes in

> Either A is B, or H is Z and every J is D

This is because from the minor premise it follows that either every J is D, or A is B. From the major premise it follows that either every D is T, or H is Z. Both are productive of the intended conclusion. You can do the same for the remaining moods and figures.

(b3) As for the third [sub-]case, a condition for its productivity is that it contains the consequent of the minor premise together with the contradictory of the antecedent in the major premise in each figure according to the composition productive in that figure. The conclusion is an exclusive disjunction composed of the contradictory of the antecedent [as it appears in the] minor premise and the contradictory of the antecedent [as it appears in the] major premise. The number of productive moods in each figure is the same as in categorical syllogisms. The first mood in the first figure is [161]:

> Whenever A is B, then every J is D
> Whenever not every D is T, then H is Z

which always concludes in

> Either A is not B, or H is Z, or every J is T

You can do the same for the remaining moods and figures.

(b4) As for the fourth [sub-]case, a condition for its productivity is that it contains the contradictory of the antecedent in the minor premise together with the consequent as it appears in the major premise in each figure according to the composition productive in that figure. The conclusion is an exclusive disjunction composed of the consequent as it appears in the minor premise and the contradictory of the antecedent in the major premise. The conclusion is then a composition of the contradictory of the antecedent in the minor premise and the consequent in the major premise. The number of productive moods in each figure is the same as in categorical syllogisms. The first mood in the first figure is:

> Whenever not every J is D, then A is B
> Whenever every H is Z, then every D is T

which always concludes in

> Either A is B, or H is not Z, or every J is T

You can do the same for the remaining moods and figures. [...]

[162.8] (c) *Concerning the third case*, the productive moods are the first mood in the first figure and the first mood in the fourth figure, and the complete part is either in the major or in the minor premise. If it is [in the major premise], then the conclusion is an exclusive disjunction composed of the contradictory of the antecedent in the minor premise and the conclusion that obtains from the consequent in the minor premise together with the major premise. For example:

> Whenever A is B, then: whenever J is D, then H is Z
> Whenever H is Z, then J is T

which always concludes in

> Either A is not B, or: J is not D or J is T

You can do the same for the first mood in the fourth figure.

Whereas in the second case [where the complete part is in the minor premise], the conclusion is an exclusive disjunction composed of the contradictory of the antecedent in the major premise and the conclusion obtaining from the consequent of the major premise together with the minor premise. For example:

Whenever A is B, then J is D
Whenever H is Z, then: whenever J is D, then J is T

always concludes in:

Either H is not Z or: A is not B or J is T

You can do the same for the first mood in the fourth figure.

[T17] Al-Ṭūsī, *Taʿdīl*, 170.3–171.12

[***critique of al-Abharī's claim that, given that anything follows from an impossible assumption, the consequence of a negation cannot be said to imply the negation of a consequence***]

[*Al-Abharī*] *says*: it is not clear to the mind that the implication of a negation implies the negation of an implication, because the antecedent of a conditional might be an absurdity, and an absurdity may imply two contradictories. Nor is it clear to the mind that the implication of an affirmation implies the implication of a negation, for the same reason.

I say: if it were really a problem (*law qadaḥa*) that an absurd antecedent may imply two contradictories—in light of the fact that what follows from a negation may imply the negation of what follows from an affirmation, given that it both implies this and leads to whatever follows from the negation at the same time, and furthermore, it implies it insofar as it leads to whatever follows from the affirmation—then this problem would already arise for whatever jointly follows from a negation, along with what follows from the affirmation. For the implication of two opposed [propositions] is the reason (*ʿilla*) why, when they are taken together, something both follows and does not follow. The problem lies with the false result (*maʿlūl*), not with the reason that leads to its falsehood, which can in no way obtain.[16]

16 The point of this rather convoluted passage is as follows. Al-Abharī argued that "if not-p, then q" does not imply "not: if p, then q" because p might be impossible, in which case it could imply both q and not-q. For al-Ṭūsi this is confused: an absurdity does not imply anything taken on its own. But once someone admits the absurdity then they can be forced to admit both of two contrary propositions.

The point stands even though in a given example, it is possible for something both to follow and not to follow in two different ways, so that you get two possible implications. For instance "animal" implies that acts of sensation (*iḥsās*) proceed from it, insofar as [animal] is sensitive, but it does not imply that voluntary motion proceeds from it in the same way. [Rather,] it implies that voluntary motion proceeds only insofar as [the animal] is moving *voluntarily*, which is not how acts of sensation proceed from it. So both [moving and not moving] may follow from [animal], or not follow, in two different ways.

If this can happen with possible [things], then obviously no such problem need arise in the way mentioned as a point of inquiry. Rather, what must be considered here is implication itself, as being capable of jointly implying contradictories. So what he ought to have said is: "it is not clear to the mind that something in itself implies anything *at all*," because the antecedent of a conditional may be impossible, and the impossible may imply two contradictories, so that the issue of implication would be blocked altogether.

As for what *is* clear regarding the following of two contradictories from something absurd, and the impossibility of clearly [understanding] that it leads to both [171] opposed propositions, the solution is to accept the premises but to say that the conclusion must not be accepted.

You need to realize that the absurd (*maḥāl*) as such, or rather the nonexistent (*maʿdūm*) as such, does not imply anything; nor can one judge that it implies anything. It is however possible to judge that it does *not* imply anything. Just as a subject, when it is nonexistent, cannot bear an affirmative judgment, whereas one can deny anything of it; a subject must be existent, in order that an affirmative judgment may be passed on it. Or at least it must be taken to be some thing that is actually present (*thābit*) in the mind, without being considered as [extramentally] existent or nonexistent. In the same way, the antecedent that implies something must be taken either as actually existing [extramentally] or as present in the mind without its being considered as being extramentally real (*thubūt fī l-khārijī*), either as possible or as impossible. This, then, is the notion of a stipulation (*farḍ*) or an assumption (*taqdīr*).

So if something is stipulated as being present [in the mind], one must judge what is implied by it and not make problems about the implication itself on the grounds that it implies [different things] on two sides. If what follows is absurd, this does not show that nothing is implied by it: rather, it shows only that what follows is nonexistent or just absurd.

[T18] Al-Ṭūsī, *Taʿdīl*, 211.5–213.7

[*response to al-Abharī on mixed categorical-conditional syllogisms with counterfactual assumptions*]

[*Al-Abharī*] *says*: if the conditional is non-coincidental (*luzūmiyya*), then from [the syllogism] no conditional conclusion obtains. For when we say: "Whenever A is B, then every J is D; and every D is H" then the conditional[17] signifies the implication from A being B to every J being D. The categorical premise signifies that every D is H in actual fact (*fī nafs al-amr*), but it might be that the categorical does not remain [true] on this assumption, so [the syllogism] does not produce the conclusion "whenever A is B, then every J is H."

I say: this objection is advanced by the Master [Avicenna] in the *Shifāʾ*, and from the same point of view (*ʿibāra*).[18] *He said*: "one needn't object to these moods and what is like them," and then went on to say, "it may be that the categorical premise is true in itself, but that it is not true on the assumption of the antecedent [in the conditional], in which case there is no syllogism. For example: 'Whenever void is existent, there is a self-subsistent extension,' but then one says: 'every extension is not self-subsistent,' or, 'nothing that subsists in itself is an extension.' So the true categorical premise is, in potentiality, the contradictory of the consequent. But one may answer in two ways. One is for us to count [only] the [conditional] connection in which both are true together. The other is [to say] that what follows from the two premises is true, but if the void is existent, then it follows that the extension is not an extension; and the implication is absurd. If the consequent [is true], then the categorical is not true." Thus far the passage from the Master.

He adduces the first reply with regard to the true *matter* [of the syllogism]. For perfect and true syllogisms are those that are important in the sciences. Whereas this combination here [sc. the one raised in al-Abharī's objection] is not like that, except in cases where the antecedent is not absurd, and the parts are not contradictories. The second reply he adduces with regard to the *form* of the syllogism. He explains that it is a syllogism, and specifies its type by saying that it falls under *reductio* syllogisms and what is like them. His words indicate that he does not make the major premise [212] true by assuming the antecedent

17 Reading *muttaṣila*.

18 Avicenna, *Shifāʾ, Manṭiq, Qiyās*, 326.3 ff.

as a condition for the validity of the syllogism. This is what has been transmitted; it is not a proof in the rational sciences, but may help our minds see what is going on (*istishhād*).

Also, whoever says that the productivity of hypothetical syllogisms in this case is to be considered [the same as in] a perfect syllogism, and who means by this that the conclusion obviously follows, with no need of proof for its productivity, this [person] has to deal with the same problem (*qadḥ*) that arises with first principles.

Resuming, then: a [hypothetical] syllogism is like something that is knitted together from two premises that are posited, without their positing being dependent on any [actual] thing. Just as the composition of two categorical premises is knitted together from two premises that are posited as dependent on two propositions, so [there may be] a composition of two hypothetical premises that share an incomplete part, or one of the two things posited [may be] dependent on a proposition, the other not, as is the case in mixed conditional-categorical [syllogisms]. They are no different in this respect, because the conclusion in the first form is posited without being dependent on a proposition, but rather insofar as it follows from the two premises of the syllogism absolutely. And in the second form it is posited as dependent on two propositions, which are in turn dependent on two premises. And in the third form it is dependent on a single proposition that itself is again dependent on its conditional premise. The dependence of whatever is posited is just like implication and association (*muṣāḥaba*), or like opposition and negation. What it depends on is in the first case another posit, and in the second case a negation. In this sense, what they share is in the same domain (*miḍmār*).

This being so, there is a difference between on the one hand, talking about (a1) the productivity of a posit that depends on negating a proposition, as opposed to (a2) a posit that depends on positing a proposition; and on the other hand, (b) something that yields no productivity at all. For the two [sc. (a1) and (a2)] share in being posits, not in the sense that they are judged to occur absolutely, but rather, that they occur as following on the negation or positing of some other proposition. For example "either five is odd or it is even," or "if five is not odd, then it is even." Here, we don't judge that evenness occurs for five absolutely. Rather, we judge that its occurrence cannot occur jointly with its being odd, or that it ensues from its not being odd. Changing the particles [indicating] disjunction or conditionality does not change the situation as to whether the occurrence depends on something else. Therefore, the discussion [213] of

the productivity of one of the two, as opposed to the other, can be undertaken only after going over that.

As for what the author of the book [i.e. al-Abharī] mentioned concerning the categorical [premise], which is the major premise in his example, namely that the situation may not remain the same once it is posited as true, on the assumption that a corollary of the shared part occurs, which in turn depends on positing the shared part—this is not something specific to conditionals as opposed to disjunctions. For if we add to the two abovementioned propositions the following: "every even thing is divisible into equal parts" as the major premise of the syllogism, then this is true in actual fact (*fī nafs al-amr*), but it does not remain true on the assumption that five is not odd, or on the assumption that it is even.[19]

[T19] Al-Ṭūsī, *Taʿdīl*, 213.22–215.19

[***on wholly hypothetical syllogisms***]

[*Al-Abharī*] *says*: when two premises are non-coincidental conditionals, then from [the syllogism] no conditional conclusion obtains. For when we say: [214] "whenever A is B, then every J is D; whenever J is D, then H is Z," the major premise signifies the implication from the middle term to the minor term in actual fact (*fī nafs al-amr*). The minor premise signifies that the middle term holds true on the assumption that the minor term holds true, too; but this does not imply that the major term is true of the minor term, and they only produce a conclusion that is a disjunction.

I say: the Master [Avicenna] mentioned this doubt in the *Shifāʾ* by giving an example, namely:[20]

> Whenever two is odd, it is a number
> Whenever two is a number, it is even
> Therefore, whenever two is odd, it is even

19 In the envisioned example, the minor premise is "every five is either odd or even." The point then would be that although the stated major and this minor premise are both true, one can reach the conclusion that five is divisible into equal parts only if one assumes that it is even (or not odd).

20 Avicenna, *Shifāʾ, Manṭiq, Qiyās*, 296.14 ff.

But this is a contradiction, and producing a contradictory conclusion from two true premises is impossible. Hence, this combination is not productive.

While answering [this doubt], he stated that this contradiction does follow [from the premises], so it is necessary for someone who accepts the premises to accept the conclusion, in light of this implication. But [the conclusion] is not true in actual fact (*fī nafs al-amr*), because the two premises are not [true in actual fact].

The author of the book [i.e. al-Abharī] explains this point as follows:

"It may be that the implication in the major premise, once one assumes that [the implication in the] minor premise no longer holds, does not remain intact either. For the judgment that 'two is even' is no longer true on the assumption that two is odd. If this requires the composition to be sterile, then similar categorical compositions would have to be sterile, too; we can exemplify such a composition with an example like:

> Everything that is both two and odd is two
> Everything that is two is even
> Therefore: everything that is two and odd is even

The falsity of the conclusion in the categorical is not due to an invalid composition, given that what is composed here is a perfect syllogism that is self-evidently [valid]. And just as the conclusion's following [from the premises in this categorical syllogism] is immediately known to the mind, so it is in our case, I mean in the case of a composition consisting of two conditionals. The problem here lies in the matter [of the syllogism]: it is putting two contradictories together as a subject term [in the categorical version]. So likewise in our case it is putting them together in the antecedent. Just as someone who accepts the syllogism composed of the two categorical premises is necessarily forced to accept the conclusion in that case, so one may capture the impossibility in the [categorical] case by saying that the subject containing two contradictories is necessarily non-existent. Hence, no affirmative judgment of it is true, and it is not true in actual fact (*fī nafs al-amr*). Likewise, the impossibility may be captured in the [conditional] example by saying that the antecedent[21] of the minor premise, on account of its containing two contradictories, does

21 Reading *muqaddim*.

not imply anything at all, inasmuch as it is contradictory and necessarily [215] non-existent. When we stipulate that it does exist, though, it may imply a contradiction, either on its own or when occurring in composition with something else."

Now that this has been laid out, *we say*: the answer to what the author of the book [i.e., al-Abharī] mentioned, namely that the implication in the major premise may not remain valid once the antecedent of the minor premise is assumed to be the case, is as follows. If the middle term in the minor premise (I mean the consequent implied by the antecedent of the minor premise) occurs just as it occurs in the major premise, as following from the major term, then nothing changes with the implication upon assuming the implication of the minor premise. For on this assumption, what is implied follows precisely in the way required by the second implication, and the second implication on this assumption is in its meaning a part of what follows (*juz' min al-lāzim*). It would be absurd that there should remain a *part* of what follows and is required [due to the implication], when [*all of*] what follows is eliminated, on the assumption of that from which it follows. If however they occur in different ways, then the composition is no longer a syllogism because there is no middle term that repeated in it as just the same [in both premises]. The invalidity derives from this, not from what the author of the book said in his consideration of the aforementioned example.

The "two" that is mentioned in the minor premise of the composition is the "two" of which it is true that it is odd, not the "two" whose nature it is to be "two-ness" in actual fact (*fī nafs al-amr*), and which cannot be odd. Now, what follows from this [first, counterfactual] "two" is oddness, or that oddness is true of it, by which I mean that the [oddness] which is mentioned in the consequent of the minor premise can only mean that which holds true of [two] insofar as it is odd. [By contrast,] the "two" that is mentioned in the *major* premise is such that this very same meaning is false for it. If you admit [the major premise nonetheless], the false conclusion has to follow. If on the other hand [the "two" in the major premise] is such as it is in actual fact (*fī nafs al-amr*), then the major is true. But then the conclusion does not follow, because the "two" that occurs in the position of the middle term is repeated in the two mentioned premises only as an utterance, but not as [having the same] meaning.

[T20] Al-Kātibī, *Shamsiyya*, 227.23–229.10 [trans. Sprenger, mod.]

[*the five kinds of hypothetical syllogisms*]

The first kind is composed of connective premises. The norm (*maṭbūʿ*) for this class is a syllogism in which the two premises have a complete part in common; [syllogisms of this kind] are classed under the four figures. For if the middle term [i.e. the part shared in common] is the consequent in the minor premise and the antecedent in the major, we have the first figure. If it is the consequent in both, we have the second. If it is the antecedent in both, we have the third figure. If it is the antecedent in [228] the minor premise and the consequent in the major, we have the fourth figure. The conditions of arriving at conclusions, the number of moods and the quantity and quality of the conclusion of every figure are exactly the same as in the categorical [syllogisms]. Example of the first mood: "whenever A is B, C is D, and whenever C is D, E is Z, thus whenever A is B, E is Z."

The second kind is composed of two disjunctive premises. The norm for this class is a syllogism in which the two premises do *not* have a complete part in common, as in: "always, either every A is B or every C is D; and always, either every D is E, or every D is Z; thus, either every A is B or every C is E or every D is Z." [...]

[228.11] *The third kind* is composed of a categorical and a connective premise. The norm of this class is a syllogism in which the categorical proposition is the major and has a term in common with the consequent of the connective [minor]. The conclusion of the syllogism is a connective proposition, the antecedent of which is the antecedent of the connective premise, and the consequent is the conclusion of the composition between the consequent [in the minor] and the categorical [premise]. For example, "whenever A is B, C is D; furthermore, D is E; therefore, whenever A is B, every C is E." [...]

[228.16] *The fourth kind* is composed of a categorical and a disjunctive premise, and it is of two types.

(a) The number of categorical propositions may be the same as the number of the parts of the disjunction, such that each categorical proposition has one term in common with the parts of the disjunction. The composition may then be either identical with that in the conclusion, or it may be different. Example of a case in which the composition is identical: "every C is either B or D or E; every B is T; every D is T; and every E is T; therefore every C is T," because

the parts of the disjunction [B, D, E] are true of that term of the categorical premises [T] which is shared with the disjunctive premise. Example in which there is a difference of composition in the conclusion: "every C is either B or D or E; every B is G; every D is T; and every E is Z; therefore every C is either G or T or Z," for the reasons just mentioned.

(b) If there are fewer categorical propositions than there are parts of the disjunction, then let there be a categorical proposition that has just one part, and a disjunctive one that has two parts, where the categorical proposition shares a term in common with the latter. Like this: "either, every A is T, or every C is B; but every B is D; hence it follows that either every A is T, or every C is D." [...]

[229] *The fifth kind* is composed of a connective and a disjunctive proposition, and the two premises have either a complete part in common or an incomplete part. Either way, the norm is that the connective proposition forms the minor and the disjunctive an affirmative major. Example of the first case [with a complete part in common]: "whenever A is B, then C is D; always, either every C is D, or every E is Z, but not both; therefore always, either A is B or E is Z, but not both. [...]" [229.8] Example of the second case [with an incomplete part in common]: "whenever A is B, every C is D, and always either every D is E, or D is Z, but not both; therefore, whenever A is B, either every C or E, or D is Z."

[T21] Al-Kātibī, *Jāmiʿ al-daqā'iq*, fol. 82r3–9

[***combinatorial hypothetical syllogisms***]

Know that hypothetical propositions may be studied as an end [in themselves] and in their own right, or insofar as they are premises for other hypothetical or categorical propositions which are studied in themselves and for the former reason. The categorical syllogisms are deduced from the hypothetical syllogisms, as you will learn.

Now that you understand this, *we say*: the combinatorial hypothetical syllogisms are of five types. For what is meant by combinatorial syllogisms is that which is composed either purely from hypothetical premises, or from those and from categorical premises. The types are by necessity [five], as we mentioned, because they may be either composed of two conditionals, or of two disjunctions, or of a categorical and a conditional, or of a categorical and a disjunction, or of a conditional and a disjunction. The four figures all apply to each of them, as will be verified. The discourse about them necessarily falls into five investigations.

[T22] Al-Kātibī, *Munaṣṣaṣ*, fol. 133^{r}1–11

[*criticism of al-Rāzī's remarks concerning the productivity of wholly hypothetical syllogisms only if the premises share a complete part*]

He [*al-Rāzī*] *said*: "Third Division on Hypothetical Syllogisms, in five parts. The first part deals with a composition of two conditional premises. The conclusion produced from them is whatever is the shared element in the complete part," etc.

I say: by "hypothetical syllogisms" are meant [syllogisms] composed of hypothetical premises alone, or of those and of categorical premises. Necessarily, there are five parts [in this division]. The first deals with compositions with two conditionals. His statement "the conclusion produced from them is whatever is the shared element in the complete part," is rejected. For the shared element produces a conclusion regardless whether it is in the *complete* part of the premises (that is, within one of the two terms in each of the two [premises]) or in an *incomplete* part of them (that is, is within one of the two terms in each of the two [premises]), or in a complete part in just one of the premises and in an incomplete part in the other (that is, in one of the terms in one of the premises, while being one of the terms in the other).

The four figures all apply in all three cases. As for the first case, if the shared element in it is the consequent in the minor premise and is the antecedent in the major premise, then this is the first figure. For example:

> Whenever A is B, then J is D
> Whenever J is D, then H is Z
> Therefore: whenever A is B, then H is Z

[…] [133^{r}15] And the productivity conditions, the number of moods, and the conclusions in quality and quantity are the same as in categorical syllogisms, without any difference.

[T23] Al-Urmawī, *Maṭāliʿ*, 81.15–83.6

[*the productivity conditions of wholly hypothetical syllogisms with mixed coincidental and non-coincidental conditional premises*]

If the middle term is a complete part in each of the [premises], then the four figures all apply, because if the middle term is the consequent of the minor

premise and the antecedent of the major premise, then this is the first figure. If it is the other way around, then it is the fourth figure. If it is the consequent in both, then it is the second figure, and if it is the antecedent in both, it is the third figure. [82] The productivity conditions, number of moods, modalities of the conclusion, and proofs for productivity in cases that are not self-evident, are in each figure the same as in the categorical syllogisms, regardless whether the syllogism is composed from non-coincidental (*luzūmī*) conditionals or of coincidental (*ittifāqī*) ones, as far as the account of its syllogistic implication is concerned. As for those [syllogisms] that are mixes between coincidental and non-coincidental conditionals, we need to draw some distinctions.

We say then that a negative conclusion requires the middle term to be the consequent in an affirmative, non-coincidental [conditional premise], whereas an affirmative conclusion requires it to be the antecedent in [such a premise]. Furthermore, [for affirmative conclusions the middle term] has to be (a) the consequent for the minor term in a coincidental [premise]; otherwise, it has to be either (b) the antecedent for the major term in it; or (c) the coincidental premise has to be specific (*khāṣṣa*).[22]

(a) Concerning the first, this is because if there is no correspondence between what implies (*malzūm*) and the way things are, it does not follow that there is no correspondence between what is implied (*lāzim*) and the way things are. Rather, from the lack of correspondence in what is implied, it follows that there is no correspondence with what implies.[23]

22 In cases where the truth of the coincidental consequent is necessary and its antecedent could be either true or false, the conditional is called either general (*ʿāmma*) or specific (*khāṣṣa*). It is called "general" if the truth of the consequent permits stipulating the antecedent; it is called "specific" if the truth of the consequent permits the truth of the antecedent. While a true *general* coincidental conditional may consist of a true antecedent and a true consequent, or of a false antecedent and a true consequent, a true *specific* coincidental conditional can only consist of an antecedent and a consequent that are both true. Cf. Q. al-Taḥtānī, *Lawāmiʿ al-asrār fī Sharḥ Maṭāliʿ al-anwār*, ed. A. Raḥmānī (Tehran: 2014), vol. 2, 435–436.

23 Consider for instance "if Socrates is in the room, someone is in the room." It doesn't follow from the falsehood of the antecedent that the consequent is false (someone else could be in the room), but from the falsehood of the consequent does follow the falsehood of the antecedent (if no one is in the room, then Socrates is not there).

(b) Concerning the second, this is because it does not follow from the correspondence of what implies that what is implied has such correspondence, but it does follow from the correspondence of what is implied that what implies has such correspondence.

(c) And when the coincidental [conditional] is specific, then it necessitates the correspondence of what implies. Whereas its being general necessitates it, if the middle term is the consequent for the minor term, as in the first figure, or if it is the antecedent, as in the third figure. If it does not necessitate this, but necessitates the truth of the major term and its not being denied of the minor term, then it is denied of what implies, which was the middle term. But this is a contradiction. The conclusion follows the coincidental premise in quality and in generality and specificity. Otherwise, if it is general and is the major premise in the second figure or the minor in the fourth, then the conclusion is specific. You know about the necessity of the universal non-coincidental [conditional], and you must learn now that the truth of the consequent is not sufficient in the general non-coincidental [conditional]; it also needs the antecedent not to be denied. If the syllogism is composed of two coincidental conditionals, it is of no use, because knowledge of it stops with the knowledge of the major term, which when it is known is known together with everything that is the case. But it is not considered in coincidental scenarios, except those that involve scenarios that are in fact the case. As an inquiry into [wholly] coincidental [syllogisms] does not turn out to be very useful, we will not talk [about them] in what follows, except in [the section] on what implies something (*fī l-malzūmāt*).[24]

24 To illustrate Urmawī's point, consider the following example:

Whenever the void is non-existent, there is extension (non-coincidental universal conditional)

Whenever there is extension, man is rational (specific coincidental conditional)

Therefore: Whenever the void is non-existent, man is rational (specific coincidental conditional)

In hypothetical syllogisms with coincidental conditionals as premises, depending on whether the conclusion is negative or affirmative, certain productivity conditions (a)–(c) must be met. If the conclusion is affirmative, the middle term must be the consequent for the minor term in the coincidental premise, and (a), (b), or (c). If not (a) and (b), i.e. the middle term is neither the consequent of the minor term in a coincidental premise nor the antecedent for the major term in it, then the coincidental has to be specific, i.e. it has to be such that both antecedent and consequent are true to ensure productivity. Were it only a general coincidental, the antecedent could be false and thus "there is extension" would no longer imply "man is rational."

[*problem of counterfactual hypotheticals*]

[83] The Master [Avicenna] raised a doubt concerning the first figure with two non-coincidental premises: whereas it is true to say "whenever two is odd, it is a number; and whenever it is a number, it is even" it is false to say "whenever two is odd, it is even." The reply to this is that the major premise, if taken as coincidental, cannot possibly be productive, while if it is non-coincidental, it cannot possibly be true. For [two's] being even does not follow in all scenarios in which it is a number, as explained previously, and in general, being an odd number [does not follow either].

[T24] Ibn Wāṣil, *Sharḥ al-Jumal*, 157.7–158.5 [trans. El-Rouayheb, mod.]

[*rejection of al-Abharī's arguments showing wholly hypothetical syllogisms to be unproductive*]

Athīr al-Dīn [al-Abharī] and other eminent scholars rejected the productivity of syllogisms composed of two connective conditionals, saying: If we say, "Whenever A is B then J is D" and "Whenever J is D then H is Z" and we suppose these to be true, we do not concede that it follows from this that "Whenever A is B then H is Z." For it may be that "A is B" is impossible and that by supposing it to be true the major premise—which is true in fact—ceases to be true.

Response: the major premise means that whenever J is D, in all situations and states that are not incompatible with "J is D", then H is Z. It is known that "A is B" is one of the items that are not incompatible with "J is D," for "A is B" implies "J is D" and what implies is not incompatible in any way with what is implied. So "J is D" implies "H is Z" also on the supposition that "A is B." Thus, whenever "A is B" is supposed to be true, it is true that what is implied by it implies "H is Z." So it is necessary that the major premise is true whenever "A is B" is supposed to be true.

You should know that when I heard this objection [by al-Abharī] it struck me as very strong, and I became unsure of the productivity of two conditionals, and I mentioned this in my book *Hidāyat al-albāb ila tamyīz al-khaṭaʾ wa l-ṣawāb*. But then, when I considered this more closely, my soul lit upon the [above] response, and my doubts concerning the productivity of two conditionals ceased.

[T25] Al-Samarqandī, *Qisṭās*, 385.19–387.12

[***on the history of texts devoted to hypothetical syllogisms***]

Hypothetical propositions may be empirical (*fiṭrī*), and they may be sought through demonstration. Since deducing hypotheticals from categoricals is a difficult matter, the logician must study hypothetical syllogisms. [387] The [first] teacher [i.e. Aristotle] did not mention them in his instruction (*fī l-taʿlīm*) [on logic]. Some have claimed that he left them out simply because knowledge of them can be based on knowledge of categorical syllogisms. But this is nonsense, because there are many distinctions and differences regarding the properties (*aḥkām*) of each of them. The Master [Avicenna] said [see T3] that perhaps the teacher [Aristotle] did discuss them, but [these discussions] were not translated into Arabic. The author of *al-Kitāb al-Muʿtabar* [i.e. Abū al-Barakāt, see T8] disputes this, on the grounds that if he had discussed them, then this would have been translated into Arabic. But this isn't necessarily so (*ghayr lāzim*).

The Master [Avicenna] said in the *Shifāʾ* [see T2]: "after studying this topic over a period of eighteen years, and having worked it out, we came across a book on hypotheticals ascribed to the eminent al-Fārābī. However, it appears to be spurious, because it was of very little clarity and full of errors and weaknesses concerning the proofs; [the author] made sterile what is productive and what is productive sterile."[25]

I say: perhaps the teacher [Aristotle] only omitted them because they are not certain in terms of their productivity, as we will explain later, if God the exalted wishes.

[T26] Al-Samarqandī, *Qisṭās*, 389.8–19

[***on hypotheticals with impossible antecedents***]

The Master [Avicenna] raised a doubt about the first figure with two non-coincidental conditionals by saying that the following is true: "whenever two is odd, it is a number; whenever two is a number, it is even"; yet "whenever two is odd, it is even" [i.e. the conclusion of these two premises] is false. To resolve

25 Note that this text departs from the wording of [T2], though it is more or less the same in meaning.

this doubt, the Master said that the minor premise is false, because two being odd is an impossibility. This is why it can imply something absurd. [...]

[389.15] But this calls for further inquiry. For this would raise a problem for all hypotheticals whose antecedents are impossibilities, even though he openly states them to be true in many places, and in general where he said that the following is true: "whenever something is void, then it is a dimension." It is more appropriate to rule out the truth of the major universal premise, since it would imply that [two] is even in all cases where it is a number; for there are amongst all the cases some where it is odd, and this case is one that would involve denying that it is even.

[T27] Al-Ḥillī, *Marāṣid*, 280.11–281.7

[*a defense of the later logicians' position on hypotheticals with impossible antecedents*]

Most of the later logicians reject the productivity of [wholly hypothetical syllogisms] with two conditionals, because the major premise signifies the implication between the middle term and the major term in actual fact (*fī nafs al-amr*) and the minor premise requires the truth of the middle term on account of its antecedent. So that it may be that the implication in the major premise no longer remains valid once one assumes the antecedent in the minor premise. For example:

> Whenever two is odd, it is a number
> Whenever two is a number, it is even

Yet it is false that:

> Whenever two is odd, it is even

But this is wrong. For the antecedent of the major premise implies its consequent on any assumption and in any case, and in all of these [281] cases, the antecedent of the minor premise yields the conclusion immediately.

But the major premise in the example is false. The judgment that "two is even" is not true on the assumption that two is odd, and here the implication between [two's] being a number and [its] being even is false. But if one accepts the truth of the two premises, then the conclusion does follow; the falsity of the con-

clusion together with the falsity of some of the premises does not make the inference invalid. Its just like saying, with categorical propositions:

> Everything that is two and is odd is two
> Every two is even

Yet it is false that

> Everything that is two and is odd, is even.

The root [of the problem] is that when the antecedent of the minor premise contains contradictories, then it is necessarily null and void (*kāna wājib al-ʿadam*). Nothing follows from an absurdity; but once it is stipulated, then it may imply an absurdity.

[T28] Al-Ḥillī, *Asrār*, 141.5–142.1

[***hypotheticals with impossible antecedents***]

You should know that if the two premises [of a syllogism] are non-coincidental [conditionals], then so is the conclusion.

A question arises here: the syllogism is only productive if the major premise is true on the assumption of the antecedent of the minor premise. When we say, "whenever A is B, then J is D; and whenever J is D, then H is Z," then J being D implies H being Z in actual fact (*fī nafs al-amr*), not on the assumption of the antecedent in the minor premise. But the conclusion obtains only in the second case. Yet this cannot be, as it is true to say, "whenever this color is black and white, then it is black; whenever it is black, it is not white." [Which would yield the absurd conclusion, "whenever this color is black and white, it is not white."]

Response: if the middle term occurs in both premises with the same meaning, then the conclusion follows necessarily. Otherwise, there is no shared element in the way you posed the example. For "black" is taken in the major premise in the sense of being contrary to the major term [sc. "white"], but in the minor premise in the sense of being conjoined to it. Hence, the implication of the major premise is no longer valid once the minor term is assumed. But when the middle term is the same in all respects, then the conclusion does follow.

Question: it is true to say "whenever two is odd, then it is a number; whenever it is a number, it is even," even though the conclusion [sc. "whenever two is odd, it is even"] is false.

Reply: if the claim (*taʿn*) in the major premise is taken to be non-coincidental, then one of the things stipulated [by it] is that the number [142] is odd, in which case it is ruled out that evenness is implied. But if it is taken to be coincidental, then the conclusion will not follow.

CHAPTER 12

Conversion

With this chapter we come to the most technical material covered in the present volume. But readers should not lose heart, because the issue of conversion is crucial for the whole logical system, already in Aristotle and also in Avicenna. "Conversion" means inferring from one proposition another proposition in which the subject and predicate have swapped places. For example, for Aristotle "every human is animal" converts as "some animal is human," and "no stone is animal" converts as "no animal is stone." One reason this is important is that conversion rules, together with *reductio*, make it possible to establish the validity of all productive syllogistic moods, on the basis of the perfect moods that need no proof of validity.[1] For example, the mood Camestres is proven at *Prior Analytics* 1.5 as follows:

> If M belongs to every N but to no X, then neither will N belong to any X. For if M belongs to no X, then neither does X belong to any M; but M belonged to every N; therefore, X will belong to no N (for the first figure has come about). And since the privative converts, neither will N belong to any X.[2]

Here the crucial step is "since the privative converts," in other words "X belongs to no N" implies "N belongs to no X" (as exemplified by the case of "no animal is stone" just given above).

Things get more complicated once we start considering propositions of different modalities. Aristotle already recognizes that the conversion rules apply to necessity propositions [T1]. With possibility propositions, the matter is more difficult: if we take "possible" to mean "two-sided possible" or "contingent," i.e. neither necessary nor impossible, then affirmatives convert as possible in this sense, but negated possibility propositions do not [T1]. But this is not yet a complete account of conversions between modal propositions. Furthermore, as we've seen in previous chapters, for Avicenna *every* categorical proposition is at least implicitly modalized. For example a simple, apparently unmodal-

1 Strictly speaking e-conversion, *reductio*, plus Barbara and Celarent suffice; see M. Malink, "Demonstration by *reductio ad impossibile* in *Posterior Analytics* 1.26," *Oxford Studies in Ancient Philosophy* 58 (Oxford: 2020), 91–155.

2 We take the example and translation from R. Smith, "Aristotle's Logic," *Stanford Encyclopedia of Philosophy* (online).

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ized proposition like "S is P" is for Avicenna in fact in the "absolute" (*muṭlaq*) mode, meaning "S is P at least once." This required various adjustments to be made regarding conversion rules. Avicenna deals with the topic in the second book of his *Qiyās* (75–124),[3] and makes several departures from Aristotle. For instance, the absolute universal negative fails to convert: "No animal always sleeps" does not imply "No sleeping thing is always an animal." Furthermore, to take the example given above, "Necessarily, every human is animal" does *not* convert as "Necessarily, some animal is human," but only "Possibly, some animal is human," because it might be that there are animals but no humans.

Another novelty of the *Qiyās* is that Avicenna explores the conversion of conditionals [T2]; among the connective propositions, there are also disjunctions, but these obviously do not convert. Just as in a categorical proposition, we swap the place of the subject and predicate, so here we swap the place of the antecedent and consequent, while retaining truth value. But this does not pose enormous problems for our conversion rules, since Avicenna and later logicians take the same rules to apply to categorical and conditional propositions. Al-Ṭūsī makes this point explicitly [T33]. To illustrate with the same rule given at the end of the previous paragraph, a necessity absolute conditional will likewise convert as a general possibility conditional, just as with the analogous categorical propositions. Thus "Necessarily, if something is a human, then it is an animal" implies "Possibly, if something is an animal, then it is a human." In the *Ishārāt*, Avicenna divides his presentation of conversion into discussions of the absolute [T3], necessity [T4], and possibility [T5] propositions.

Al-Sāwī is our first example of someone responding to these rules. He follows Avicenna in rejecting the conversion for absolute propositions from "No B is J" to "No J is B" [T6]. By contrast, Abū al-Barakāt thinks Aristotle was right here, since the negation includes an implied duration: if "No B is J" means "*At every time*, no B is J," then obviously it follows that "At every time, no J is B" [T10]. Al-Sāwī also rejects the conversion from "No B is J as long as it is B" to "No J is B" [T7]. The key insight here is that "No B is J" is not being taken as "necessary" or "essential"; it holds true of B only insofar as it is described as B (a similar point is made in [T8]). So here we see distinctions discussed in previous chapters (in this case, between *dhātī* and *waṣfī* predication) making an impact on the discussion of conversion rules.

A full account of the conversion rules is supplied by al-Suhrawardī in [T9], a passage that all by itself should be enough to cure anyone who, having read

3 For the details see T. Street, "An Outline of Avicenna's Syllogistic," *Archiv für Geschichte der Philosophie* 84 (2002), 129–160; P. Thom, *Medieval Modal Systems: Problems and Concepts* (Aldershot: 2003); R. Strobino, "Ibn Sīnā's Logic," *Stanford Encyclopedia of Philosophy* (online).

nothing but *Ḥikmat al-ishrāq*, assumes that al-Suhrawardī's interest in logic was restricted to rejecting fundamental "Peripatetic" doctrines like the theory of definition. A similarly comprehensive account is supplied by al-Rāzī, in a passage which is notable for arranging the rules in accordance with his definitive list of 13 propositional types that are to be discussed in logic [T11]. This may be original with him, and makes the business of establishing conversion rules much more economical. If, for any modality, a converse can be disproved, one has automatically disproved all analogous conversions for weaker modalities.[4] Moreover, al-Rāzī brings his distinction between *ḥaqīqī* and *khārijī* to bear (see our introduction to this volume). For instance, he differs from his predecessors in claiming that on an essentialist reading the perpetual negative absolute ("Always, no B is J") does not convert as itself.

Al-Khūnajī's treatment of conversion has been fully translated with commentary by Tony Street, so readers are referred there for the full story.[5] Here we include only a few highlights: his take on conversion of universal negations, his criticism of al-Rāzī, and the conclusion to the entire chapter [T12]. Al-Khūnajī's overall approach is conservative, as he himself admits: his treatment of conversion rules is not so different from what we find in the "older" logicians, while it differs significantly from his more recent predecessors, especially al-Rāzī. He also notes that matters have been needlessly obscured by changes in terminology [T13]. Al-Abharī too is critical of developments in Avicennan logic. In *Khulāṣat al-afkār*, he takes issue with the positions of Avicenna and al-Rāzī on conversion, and like Khūnajī, provides a complete overhaul. The main issue for him is the conversion of absolute necessity negations. This is an important question, given that necessity is the strongest modality, and conversions of negations are crucial for proofs. Al-Abharī rejects Avicenna's arguments to the effect that such propositions convert "as themselves" (that is, "Necessarily no J is B" implies "Necessarily no B is J") [T14]. He also critiques al-Rāzī's remarks on the conversion of such propositions on the essential (*ḥaqīqī*) reading [T15, T16]. The discussion concludes on a more positive note, presenting al-Abharī's own account of conversion [T17]. Notably, he makes the absolute necessity negations convert not "as themselves" but as perpetuity propositions, in other words "Necessarily, no B is J" implies not "Necessarily, no J is B" but merely "Always, no J

4 Here "stronger" means that the conditions required for the truth of the propositions are more restricted; since the "weaker" includes these more restricted cases, disproving the conversion in a "stronger" case amounts to providing a specific counterexample to a more general ("weaker") rule.

5 T. Street, "Afḍal al-Dīn al-Khūnajī (d. 1248) on the Conversion of Modal Propositions," *Oriens* 42 (2014), 454–513.

is B." The reader may wish to consult their intuitions here: does "Necessarily, no human is a flying animal" convert as "Necessarily, no flying animal is a human," like the Avicennans say, or "Always, no flying animal is a human," like al-Abharī says?

One author who sides with the Avicennans is, of course, al-Ṭūsī, whose *Taʿdīl* we have often used in this book for its critical commentary on al-Abharī. As usual, the emphasis here is on "critical." Al-Ṭūsī objects even to the prominence of conversion in al-Abharī's presentation [T18]. Al-Ṭūsī thinks it is actually not all that important: true, it proves the various syllogistic moods, but it is not that crucial a topic in its own right. At the level of content, al-Ṭūsī is withering in his assessment of al-Abharī's treatment of conversion. He reasserts the conversion of absolute necessity negations as themselves and critiques al-Abharī's arguments against this position at length [T19, T20, T21, T22, T23]. Yet al-Kātibī follows the position of al-Abharī on this in his usefully clear overview of the conversion rules [T24]; for another nice overview see al-Urmawī in [T25].

Our single passage from al-Samarqandī does not really do justice to his lengthy treatment of conversion in the *Qisṭās*. We have included this passage because it gets into the unusual question of conversion of propositions with a relational predicate, like "… on a throne" [T26]. "All B is J" implies "Some J is B," but caution is needed in this case, since "Every king is on a throne" does not imply "Some throne is on a king" but "Some of what is on a throne is a king." As al-Samarqandī notes, once we realize that the relational preposition "on" belongs to the predicate and not the copula, "the problem disappears."

Our final batch of passages is drawn from al-Ḥillī's *Asrār*, which offers a historical account of different positions on conversion going right back to al-Fārābī [T27]. In the remainder of the texts, al-Ḥillī weighs in on topics that have emerged as controversial. As often, he sides with al-Ṭūsī, whom he here quotes. Negative necessity propositions do convert as themselves [T28], as do negative perpetuity propositions [T29], and the arguments to the contrary are bogus. On the other hand, he emphasizes that we should not always expect the modality of a converted proposition to match that of the original proposition [T31]. Other interesting points include his rejection of al-Sāwī's claim that conventional propositions about particulars convert as themselves [T30], and a defense of Avicenna's view that affirmative possibility propositions do not convert as themselves [T32].[6]

6 See also T. Street, "Avicenna and Tusi on the Contradiction and Conversion of the Absolute," *History and Philosophy of Logic* 21 (2000), 45–56.

In conclusion we might return to [T18] and the disquiet shown there by al-Ṭūsī at the way al-Abharī and others were treating conversion as a topic worthy of attention for itself. Against this, al-Ṭūsī reminds us that conversion is really only important as a device for proving the syllogistic moods. This typifies something we've seen in this book: logic as a whole, and certain previously marginal issues within logic (for instance impossible antecedents in counterfactuals), had escaped from their function as a mere "instrument" of philosophy and become something like a free-standing body of doctrines and debates. This process was surely started by Avicenna himself. With his systematic modalization of all propositions, he created the conditions for pursuing questions that seem incidental to the supposed goal of Peripatetic philosophy, namely the acquisition of demonstrative knowledge. After all, demonstrative syllogisms must have universal and necessary premises, so most of the modalities considered in Avicennan and post-Avicennan logic would not feature in proper demonstrative proof. Of course, scientific discourse since antiquity had in fact involved premises with a wider range of modalities. So it is not as if this unprecedentedly complete systematization of modal logic is without utility for scientific inquiry. Nonetheless, especially beginning with al-Khūnajī, we see the possibility of sophisticated work on logic that is no longer subordinated to the project of Aristotle's *Posterior Analytics* (and its pendant in Avicenna, the *Burhān*). Logic was now a matter of sustained and sophisticated philosophical attention in its own right.

Texts from: Aristotle, Avicenna, al-Sāwī, Abū al-Barakāt, al-Suhrawardī, al-Rāzī, al-Khūnajī, al-Abharī, al-Ṭūsī, al-Kātibī, al-Urmawī, al-Samarqandī, al-Ḥillī

[T1] Aristotle, *Prior Analytics*, 25^a26–25^b25 [trans. Striker, mod.]

[*conversion rules for necessary premisses*]

It will be the same way also in the case of necessary premises, for the universal privative converts universally, and each of the affirmatives converts with respect to a part. For if it is necessary for A to belong to no B, it is also necessary for B to belong to no A, since if it could belong to some A, then A could also belong to some B. If A belongs of necessity to all or to some B, it is also necessary for B to belong to some A. For if this were not necessary, then neither would A belong to some B of necessity. The particular privative premise does not convert, for the same reason that we mentioned before.

[*conversion rules for possible premisses*]

In the case of possible premises, given that "being possible" is said in several ways—for we say of the necessary as well as of what is not necessary, and also of the possible, that it may be—all the affirmative premises will indeed behave in the same way with respect to conversion. For if A may belong to all or to some B, B may also belong to some A, for if it could not, neither could A belong to any B, as was shown before.

However, the negative premises will not behave in the same way. The same account does hold, though, for whatever is possible because it necessarily does not belong or because it does not necessarily belong, as, for example, if someone said that it is possible for man not to be a horse, or that white may belong to no garment. Of these the first necessarily does not belong, the second does not necessarily belong, and the premise converts in the same way. For if it is possible for no man to be a horse, it is also possible for no horse to be a man; and if white may belong to no garment, then garment may also belong to no white thing. For if it necessarily belongs to some, then white will also belong to some garment by necessity; this was shown before. The same holds also for the particular negative.

But when something is said to be possible because it belongs for the most part or by nature the way we define the possible the same account will not hold for the conversion of privative premises; rather, the universal privative does not convert, while the particular does. This will be evident when we discuss the possible.

[*metathetic propositions convert as affirmatives*]

For the moment, let this be clear in addition to what we have said: that "possibly belonging to none" and "possibly not belonging to some" are affirmative in form. For "is possibly" has the same position as "is," but "is," wherever it is added in predication, always and in any case produces an affirmation, such as "is not-good" or "is not-white," or in general "is not-such-and-such." This will also be shown later. And with respect to conversions these will behave like other affirmations.

[T2] Avicenna, *Shifāʾ, Manṭiq, Qiyās*, 385.4–386.6 [trans. Shehaby, mod.]

[***conversion of connective propositions***]

On the subject of conversion, we shall only deal with the conversion of the connective proposition. *We say*: there are two kinds of conversion in the connective proposition. One is straightforward conversion, the other is conversion by contraposition. In straightforward conversion you turn the antecedent into a consequent, and the consequent into an antecedent, while keeping the quality as it is. In this case the truth[-value] will be preserved. In conversion by contraposition, you put the contradictory of the consequent in place of the consequent, and the same for the antecedent [e.g. "If A then B" converts to "If not-B then not-A"].

Let us start with straightforward conversion. *We say*: from "Never: when every A is B, then every C is D," it will evidently follow that "Never: when every C is D, then every A is B." If this were not so, then let at one time "Every C is D" be the case together with "Every A is B." Thus sometimes "Every A is B" and "Every C is D" would be together. But we said that this can never be the case.

[***relevance problem***]

However, this creates a problem in some cases, as when we say "Never: if man exists, then void exists." For it is not true to say "Never: if void exists, [386] then man exists" if the statement is meant to indicate that when the antecedent is assumed, the consequent will not be connected with it by chance. But if it meant to indicate the negation of implication, then the above conversion will not be valid. *We say, however*: in case the consequent is impossible the proposition ["Never: if every A is B, then every C is D"] cannot be converted into a negation of coincidental connection, but into a negation of implication. And in this case the above-mentioned proof of conversion will not hold, since we cannot assume its affirmation, nor can we specify it in existence. The negation and the affirmation of coincidental connections are more general than the affirmation of implication.

[T3] Avicenna, *Ishārāt, Manṭiq*, 114.3–117.4

[***conversion of absolute propositions***]

Conversion is making the predicate of a proposition to be the subject, and the subject to be the predicate, while retaining the quality and truth or falsehood [of the proposition]. It is customary to begin with the conversion of the univer-

sal absolute negative proposition, and to show that it converts to itself. But the truth is that it does not have a conversion, except by some procedures already mentioned. Thus it is possible that "laughing" might be negated for every individual human being regarding what is in fact (*bi-l-fi'l*) the case, but this does not necessitate the negation of "human being" for anything that laughs. For one thing may be negated, in an absolute manner, of something else (the latter being the only thing in which the former could exist), yet without its being possible to negate the latter of the former. [...]

[116.2] The universal affirmative need not convert to a universal proposition, for the predicate may be more general than the subject. Nor need it convert to a pure absolute proposition, without necessity. For the predicate may not be necessary for the subject, whereas the subject is necessary for the predicate, such as respiration for the animal that has lungs. Respiration is [merely] existent [for such an animal], without being concomitant all the time. Whereas being an animal with lungs is necessary for respiration. For every being that respires is, by necessity, an animal with lungs. Instead, an absolute proposition converts only to a general absolute, capable of receiving necessity.

But the affirmative universal can, without doubt, be converted to an affirmative particular. Thus if "Every J is B," then we must be able to find a concrete thing that is J and B. This J will then be B, and this B will be J. Similarly, the affirmative particular converts to itself. And if the affirmative universal and the affirmative particular are among the absolute propositions that have a contradictory of the same genus, then it can be shown that they convert to a particular in the following way: if it is not true that some B is J, then no B is J, from which it follows that no J is B. [117] As for the negative particular, it does not convert. For it is possible that "Every J is not B" when "Every B is J," so it is not the case that "Every B is not J." For example, it is true that some human beings do not actually laugh, yet it is not possible that none of the things which actually laugh is a human being.

[T4] *Avicenna, Ishārāt, Manṭiq*, 117.8–118.10

[***conversion of necessary propositions***]

As for the necessary universal negative, it converts to itself. For if "B is by necessity negated of every J," and if it were then possible to find some B which is J and to posit that this [is the case], this would convert to "Some J is B," in accordance with what is demanded by the absolute proposition, which is common to the

necessary and others. But this is not at all true with the universal necessary negation. Rather, it is impossible that they are true together. So [this assumption] has led to something impossible. [...]

[118.2] The necessary affirmative universal converts to an affirmative particular, in accordance with what has been shown about the case (*ḥukm*) of the general absolute proposition. But it need not convert to a necessary proposition. For it is possible that the conversion of a necessary proposition is to a possible one. It is possible that J (e.g. "laughter") has B (e.g. "human being") as necessary for it, while B (e.g. "human being") has J (e.g. "laughter") as *non*-necessary for it. Do not believe anyone who says anything else and attempts to play tricks concerning this matter! So, the necessary affirmative universal converts [to a possible proposition], whose "possibility" is taken in the most general sense.

The necessary affirmative particular also converts to a particular, along the same lines. But the necessary negative particular does not convert, for the reason you already know. For example: "By necessity, not every animal is a human being." But "Every human being is an animal." But it does not [follow] that "Every human being is not an animal."

[T5] *Avicenna, Ishārāt, Manṭiq*, 118.14–120.9

[***conversion of possible propositions***]

As for the possible propositions, they need not have a conversion in negation. For "It is not impossible, but possible, that no human being writes," does not necessarily imply that "It is possible and not impossible, [119] that none of those who write is a human being; or that some of those who write are not human beings." This example works likewise to show the situation with the possible in the most proper and proper senses (*fī l-mumkin al-akhaṣṣ wa-l-khāṣṣ*).[7] For one thing may be denied of another, but not conversely, because the latter is the proper subject of the former, and the proper is what belongs only to it.

Affirmative [possible propositions] must convert, but the proper possible should not convert to itself. Don't listen to anyone who says that if a thing is

7 Possibility in the proper sense is contingency, i.e. neither impossible nor necessary (whereas possibility in the "general" sense would be simply the denial of impossibility, and hence would include necessity). Possibility in the "most proper" sense, as Avicenna will go on to say here, is when a predicate can possibly belong only to a certain type of subject.

[merely] possible, and not necessary for its subject, then likewise is its subject with respect to it. Just consider how "moves voluntarily" belongs to the possible [predicates] of "animal," whereas "animal" is necessary for it [sc. "moves voluntarily"]. Pay no heed to the tiresome discussions offered by one group on this topic.

Rather, all types of the possible in affirmation convert, [but] according to the most general possibility. Thus if "Every J is possibly B" or "Some J is possibly B," then "Some B is possibly J," but in the most general sense. Otherwise, it would not be possible that any B is J. But as you already know, "By necessity, no B is J" converts to "By necessity, nothing of J is B," yielding an absurdity [i.e. because we started with "Some J is possibly B"].

Someone might say, "why don't you convert the proper possible negative, since it is of the same force as [120] the affirmative one?" *We say*: the reason for this is that it—I mean the affirmative one—only converts to an affirmative of the most general type of possibility. Thus the quality would not be preserved. If its conversion had to be to a proper possible, then one could convert it from an affirmation to a negation, and the modality would be brought back through the conversion. But this is not [how] the conversion ought to work.

One group claims that the possible particular negative converts, for the reason that [the proper possible] particular affirmative, which is the same in force, converts; the assumption being that [the latter] also [converts] to a proper [possible], which can be brought back to negation. But their position is false, as you may verify from what you have already learned. Take the example: "It is possible that some human beings do not laugh"; we do not say [as a legitimate conversion]: "It is possible that some who laugh are not human beings."

[T6] Al-Sāwī, *Baṣā'ir*, 129.17–130.14

[***conversion of universal negative absolute propositions***]

[Simple conversion] is to make the predicate the subject and the subject the predicate, while retaining the quality and truth or falsehood [of the proposition]. The quantification, though, need not remain as it was. So let us begin with the absolute propositions, and of those with the universal negated ones.

It has been maintained that they convert as themselves absolutely. This has been supported by saying that if "No B is J" is true, then "No J is B" is also true.

For otherwise its contradictory, "Some J is B," would be true, either absolutely (as they would have it), or perpetually (which is what would be right). For this "some" is specified to be J and B by ecthesis,[8] so there is a B that is J. [130] But we said that "No B is J," so this is absurd.

But you have learned in the preceding that the universal negative absolute proposition and the affirmative absolute cannot both be false, even if [the latter] is [also] universal. And how [could it be otherwise]? If it is particular, "Absolutely, no human laughs" would be jointly true with "Every human is laughing," that is, laughing in actuality; to say nothing of the joint truth with "Some humans laugh." So what they claimed does not in fact lead to absurdity. [Rather,] the proposition yielded by ecthesis is: "There is a B that is J, but not always," and it contradicts the truth of the first negation that was posited [sc. "No B is J"]. You have already learned that when we say "Some J is B" or "Every J is B," we mean everything of which J is said either perpetually or non-perpetually. If perpetuity is not stipulated on the side of the subject, then the meaning of "Some J is B perpetually" is that some of the things that are said to be J perpetually or non-perpetually are B perpetually. If we perform ecthesis on this "some," then this "some" is B perpetually, and described as being J absolutely, without conveying whether or not it is perpetual. So there is a B that is J absolutely, without the condition of perpetuity or non-perpetuity, contradicting the first negated proposition. Which was "No B is J."

So this overturns what they falsely imagined to be an argument, and in fact the claim [that the absolute converts as itself] is incorrect. For "laughing" (or any other proper accident that is not a necessary concomitant of "human") is truly negated of "human" in this sense of absoluteness, but negating "human" of "laughter" is not. No subject can be negated of its proper accident if it belongs only to [that subject]. Now that you know this about the absolute proposition,

8 Ecthesis (*iftirāḍ*) refers to a strategy by which something is stipulated in order to infer something else that can be used in a proof. Here, ecthesis is used as part of a *reductio ad absurdum* proof (in which p is proved by assuming not-p and then inferring a contradiction):

1.	No B is J	premise
2.	Not (No J is B)	contradictory of 1 assumed for *reductio*
3.	Some J is B	= 2
4.	There is a D which is both J and B	ecthesis from 3
5.	Some B is J	from 4; contradicts 1, hence absurd

Aristotle had already employed ecthesis (hence the calque from Greek) but scholars are far from unanimous how to precisely understand ecthesis (see for example: P. Thom, "Apodeictic Ecthesis," *Notre Dame Journal of Formal Logic* 34/2 (1993), 193–208).

which can be applied to the necessity proposition as well, you also know it for the existential proposition; the necessity proposition however falls outside of it.

[T7] Al-Sāwī, *Baṣā'ir*, 130.15–131.14

[***conversion involving predicates that apply to a subject only under a description***]

They made two maneuvers to show the truth of this conversion [i.e., of the conventional proposition]. One was to say that the negation remains absolute, and in the [131] conventional sense (*al-mafhūm al-ʿurfī*), namely that the predicate is negated of the subject so long as it is described by a given attribute that has been assumed to hold of it. The other is to specify the negation as [applying] to it at a specific time in the past or present, according to the third method.

So the negated converse is true when it is taken in one of these two ways. If we say "No B is J as long as it is described as B," whether or not it is always described as B as long as it exists, then its converse is true, this being "No J is B." The argument they mentioned applies here, too. The particular affirmative absolute proposition contradicts the universal negative absolute, even if they are both taken as absolute in the conventional sense.

Now, if this first negated proposition is not such that the description of its subject persists as long as it exists, likewise its converse is not necessary for all [instances]. Rather, [the converse holds only] so as long as the subject is described by this attribute that belongs to it accidentally. But if it were necessary, then its converse would be necessary, as you will learn later: that is, the converse of a negative necessity proposition is also a necessity proposition.

But let us assume that the first negation is not necessary. In that case, if the description applies always, so long as it exists, then the same goes for the converse. An example of the first is "No white thing is black," that is, not always but as long as it is described as white; it may be that it ceases to be white.

The same also goes for the converse, which is "No black thing is white." An example of the second is "No stone is an animal as long as it is a stone." Here the description remains as long as it exists, and the same goes for its converse, which is "No animal is a stone": the negation holds as long as it exists.

[T8] Al-Sāwī, *Baṣā'ir*, 132.18–135.5

[*the older logicians and the most eminent of recent logicians on the conversion of absolute propositions*]

For the older logicians, because they did not verify the contradictory of the absolute and believed it [also to fall] under the class (*jins*) of the absolute, this [133] argument did not apply. For the contradictory of "Some J is B," according to their belief, was "No J is B absolutely." But this does not convert, as we said earlier. If it too were to convert as an absolute, then the [converse] and the universal affirmative would not be mutually exclusive, as you have learned. As for the most eminent of the later logicians [sc. Avicenna], he objected to the older logicians by the argument we mentioned, and specified that this argument applies on the condition that the subject must necessarily have its description perpetually. Thus he granted them the argument. But with his specification of the argument with absoluteness of this kind, the general argument as mentioned above doesn't work. We have come up with a clever way around this and will mention it in the [discussion of] the conversion of negative universal necessity propositions. [...]

[134.4] Perhaps the most eminent of the later logicians specified the arguments about the conversion of the two pairs of universal [135] and particular affirmative absolute and existential propositions, by means of a condition stipulating that the subject must have its description perpetually, so that he would not be forced to employ the conversion of universal negative perpetuity propositions in his proof. For those are no different from the universal necessity propositions, and the proof of conversion requires the use of clear particular affirmative propositions as conversions of this negated proposition (that is, the [negative] perpetuity proposition) in order for there to be no circularity. But if the particular affirmative propositions are shown by way of ecthesis, then there is no need to use the conversion of negative propositions in it and no circularity arises.

[T9] Al-Suhrawardī, *Manṭiq al-Talwīḥāt*, 40.9–43.13

[*conversion of negative necessity propositions*]

You should know: conversion is making the subject of a proposition the predicate, and the predicate the subject, while retaining the quality and truth or falsehood [of the proposition]. We begin with the negative necessity proposition, even if this is not customary, given our objective [namely, to treat the most

important first]. *We say then*: if "Necessarily, no J is B," then its converse [41] "Necessarily, no B is J" is correct. Otherwise, "Some B is J by general possibility" would be true; then, we posit its existence stipulating that some B described by J is a concrete thing; call it D. So D, as a B that is described by J, shows that some J is described by B. Hence, we say "Necessarily, no J is B," yet it is impossible that this is jointly true with [some J being described as B]. So the former is true and the latter is false, because it is absurd. Thus what led to it must be absurd, namely "Some B is J"; so "Necessarily, no B is J" is correct.

[***conversion of affirmative universal necessity propositions***]

The affirmative universal necessity proposition does not convert as a universal, because the predicate may be more general than the subject, for example "animal" and "human." So it does not convert as a universal. But it must have a converse. So if "Necessarily, every J is B," then we find something determinate that is described by J-ness and B-ness; let it be D. This is a J described by B, so that a B is described by J-ness. Now, since the converse does not hold as a universal, it does so as particular, namely "*Some* B is J." It does not convert as necessary either, because it may be that the predicate, like "human," is necessary for the subject, like "writer," yet the subject is not necessary for the predicate, but only possible. Nor does it convert as non-necessary in all situations, because it may be that the subject and the predicate are each necessary for the other, like "human" and "rational." So [its modality] must be something more general than this, namely general possibility [that is, either necessity or contingency]. This is more appropriate than general absoluteness in some situations, because it is not more general than what does not occur, and not all special possibilities share in general possibility. *We prove this conversion in another way by saying*: if "It is possible that some B is J by general possibility" is not true, then "Necessarily, no B is J" is true. Hence, by necessity no J is B, as we proved its converse. So we may now say "Necessarily, no J is B."

[***conversion of particular necessity propositions***]

The affirmative particular necessity proposition converts as an affirmative particular general possibility proposition by the aforementioned proof using ecthesis and *reductio*. The negative particular necessity proposition does not convert, because the subject may be general, like "animal," and [42] the specific predicate, like "human," may be negated of some of [the subject's] instances by necessity. So there is no conceiving a converse. [...]

[*conversion of negative possibility propositions*]

As for the negative possibility propositions both general and special, they don't have a converse, for they may deny a possible predicate, like "writing" [is denied] of a subject necessary for it, like "human." But this does not entail a converse such that one could say that nothing that writes is a human. The same holds for the particular, since "human" is the subject of "writing" and not an accident for it (if there were no [human], there would be no [writing]). Because the [accidents] do not exist without the [substance], what is denied of one cannot [conversely] be denied of the other. The universal affirmative possibility proposition, both general, specific, and particular, converts as particular, as we showed by ecthesis. The converse of the special possibility proposition does not yield a special possibility proposition, because it may be that the possible predicate is necessary for the subject, like "actually laughing" is for humans. If it is said: "Possibly, every human is laughing," this does not convert as a possibility but as a necessity. Yet the necessity is not without exception either, for it may be that the subject and the predicate are each possible for the other, as with "writer" and "actually laughing." Hence it is true, [but only] possibly. What is more general [i.e. modally weaker] than necessity and two-sided possibility is one-sided possibility. *We say then*: if every J is B by any kind of possibility, then some B is possibly J. Otherwise, "Necessarily, no B is J" and "Necessarily, no J is B" [would be true], but all or some [J] was B, so this would be absurd. [...]

[*negative general absolute and existential propositions have no converse*]

[42.18] The negative general absolute and existential propositions have no converse, contrary to what was supposed by [43] those who only considered the matter superficially. They argued [for a converse] by way of *reductio*, but they were unaware that *reductio* is constructed upon the contradictory, and these propositions have no contradictory. If the contradictory is taken to be the particular perpetual, then it would convert to a particular affirmative absolute proposition. But the converse would not preserve the modalities of necessity and perpetuity, and would not contradict the negative absolute. Consider that, if we say "Absolutely, no human is actually laughing," how should this not result in [the converse] "Nothing that is actually laughing is a human"?

[*conversion of affirmative absolute and existential propositions*]

The two affirmative absolute propositions, universal and particular, convert as particular propositions, as we have shown by ecthesis. Likewise the existentials, both of which convert as general absolute propositions. If the existential predicate applies to a subject, as "breathing" to "lunged animal," then the converse

here is not existential but necessary. In the case where subject and predicate are each existential for the other, like "breathing" and "sleeping," which are examples of existential predicates for "human," each of them converts as the other existentially. What is more general than these two modal matters[9] is general absoluteness. The *reductio* proof can easily be done here: if "Absolutely, every or some J are B," then "Absolutely, some B are J." Otherwise, "Always, no B is J," and "Always, no J is B." But all or some [J] were B absolutely, so this is absurd.

[T10] Abū al-Barakāt, *Muʿtabar*, vol. 1, 120.20–121.8

[*Aristotle was right to convert the negative absolute, because it includes reference to duration*]

There is a difference between the affirmative and the negative proposition. It has been claimed, on account of inadequate inquiry, that the universal negative absolute proposition does not convert in the way Aristotle said, namely as it is (*mithl nafsihi*) [i.e. with the same quality and modality] and as universal. He adduced an example for this, saying: if "laughing" is actually negated of every human at a certain time, then this negation is absolute, and does not convert. That is, its converse is not true, namely "nothing laughing is a human." Rather, everything that laughs is a human; [the opponent] does not even express in his argument the words "at a certain time" and "actually." The absolute (*al-muṭlaq*) is unconditioned by (*muṭlaq min*) these and other [specifications]. [121] He does not mention here [anything about holding at a] certain time or under a condition; he just mentions the predicate, the subject, and the quantifier in the affirmative, and the negational particle in the negative, without adding anything. Put like this, what he adduces as an example is not true, since it does not result from this that, upon hearing the two conceptions,[10] "No human is laughing" would hold absolutely, just because at some time [each human] is

9 In Arabic logic, the modal matter (*mādda*) of a proposition refers to the modal relation in which the predicate stands to the subject. By contrast, the mode (*jiha*) of a proposition is the modality expressed by the modal operator of the proposition. Mode and modal matter of a proposition need not be the same. For example, in "Every human is necessarily a writer," the mode is necessity, as expressed by "necessarily," but the modal matter is possibility, because "writer" is only possibly true of "every human." For a discussion of this terminology, see A.Q. Ahmed, "Jiha/Tropos-Mādda/Hūlē Distinction in Arabic Logic and Its Significance for Avicenna's Modals," in S. Rahman, T. Street, and H. Tahiri (eds), *The Unity of Science in the Arabic Tradition* (Dordrecht: 2008), 229–253.

10 Reading *al-taṣawwurayn*; the reference is to the conceptions of "human" and "laughing."

not laughing. What *does* result is that "Every human is laughing" because at *some* time [each human] is laughing. The form of the statement as an affirmation does not include duration, whereas negation does include duration, so that denying something means denying it in this sense. Think about this argument and its place in understanding and conception, and disregard everything they talked about at such length. Verify the correctness of Aristotle's argument, and not of the plain words of [the opponent] that lack any subtle application.

[T11] Al-Rāzī, *Manṭiq al-Mulakhkhaṣ*, 197.6–199.16 [trans. Street, mod.]

[***conversion of modalized universal negative propositions***]

You should know: my settled view with respect to conversion is as follows. As regards universal negative propositions: contracted temporal (*waqtiyya*) and spread (*muntashira*) necessity universal negative propositions come under the two-sided actuality proposition (*wujūdiyya lā dā'ima*), which comes under the non-necessary actuality proposition (*wujūdiyya lā ḍarūriyya*), which comes under the two-sided possibility proposition (*mumkina khāṣṣa*), which comes under the one-sided actuality proposition (*muṭlaqa ʿāmma*) as regards truth-conditions (*min wajh*), and the latter comes under the one-sided possibility proposition (*mumkina ʿāmma*).

Once it is established that the strongest [of these propositions] doesn't convert, it follows also that the weaker [don't convert]. But contracted temporal (*waqtiyya*) and spread (*muntashira*) necessity universal negative propositions don't convert (because it is correct to say "no person is breathing," but not correct to say "nothing breathing is a person"; indeed, by necessity, something breathing is a person). Thus [198] none of these seven propositions converts.

The six remaining universal negative propositions: the absolute necessity (*ḍarūriyya muṭlaqa*) proposition converts as an absolute necessity (*ḍarūriyya muṭlaqa*) proposition due to what is established in first principles, namely that if one of two things is incompatible with the other, then the other is incompatible with it.

The general conditioned (*mashrūṭa ʿāmma*) proposition converts as itself, because what it means is just as was stated about it with reference to the impossibility of conjoining descriptions. So the explanation for it is exactly what was given for the absolute necessity (*ḍarūriyya muṭlaqa*) propositions.

The special conditioned (*mashrūṭa khāṣṣa*) necessity proposition converts as a general conditioned (*mashrūṭa ʿāmma*) proposition, due to what was established above concerning the conversion of the special conventional (*ʿurfiyya khāṣṣa*) proposition as a general conventional (*ʿurfiyya ʿāmma*).

The subject of the perpetual absolute (*dāʾima muṭlaqa*) proposition may be taken under the essential reading (*bi-ḥasab al-ḥaqīqa*) or the externalist reading (*bi-ḥasab al-wujūd al-khārijī*).

If it is taken with the first reading, it converts for the reasons we have presented before. The *reductio* argument and suppositions some have advanced go through only if the subject of the proposition is taken according to external existence; but that is not what we are dealing with here.

If it is taken with this second reading [sc. according to external existence], it converts as itself due to the ecthetic and *reductio* proofs mentioned. If you understood what was said about the absolute perpetuity proposition, then you can work from it to what should be said about the [199] two negative conventional (*ʿurfiyya*) propositions.

[***conversion of modalized affirmative propositions***]

Affirmative propositions: we say that the subject of the proposition is taken with reference either to essence, or to external existence.

If the first, the necessary absolute (*ḍarūriyya muṭlaqa*) particular affirmative propositions convert as a one-sided possibility (*mumkina ʿāmma*) particular affirmative proposition, according to the proof given before.

This being so, the converse of general conditioned (*mashrūṭa ʿāmma*), general conventional (*ʿurfiyya ʿāmma*), perpetual absolute (*dāʾima muṭlaqa*), one-sided actuality (*muṭlaqa ʿāmma*), and one-sided possibility (*mumkina ʿāmma*) propositions is a one-sided possibility (*mumkina ʿāmma*) particular affirmative proposition. This is due to what has been established, namely, that the converse of the weaker cannot be stronger than the converse of the strongest [proposition].

Once this is established for the necessary absolute (*ḍarūriyya muṭlaqa*) proposition, then it makes sense that the converse of the two contracted existential (*wujūdiyyatayn*) propositions, two-sided possibility (*mumkina khāṣṣa*) propositions, and the like, should be a one-sided possibility (*mumkina ʿāmma*) par-

ticular affirmative proposition. The proof for this is clear from what has gone before.

But if the subject of the proposition is taken according to external existence, the converse of the necessary absolute (*ḍarūriyya muṭlaqa*) affirmative is a one-sided general absolute (*muṭlaqa ʿāmma*) particular affirmative proposition. Otherwise the perpetual absolute (*dāʾima muṭlaqa*) universal negative proposition would be true, in which case it would convert as an perpetual absolute universal negative proposition (because the subject is taken according to external existence, and you already know that conversion in this form is necessary).

The same is to be said about all the propositions in which the actual occurrence of their predicates for their subjects is taken into account, such as the contracted actuality propositions, and the two existential (*wujūdiyyatayn*) and the two temporal (*waqtiyyatayn*) propositions.

However, if the subject is taken for the two-sided possibility (*mumkina khāṣṣa*) proposition, the strongest general possibility proposition, and the future possibility proposition, whether according to essence or according to actual existence, they all convert as a one-sided possibility (*mumkina ʿāmma*) proposition. This a summary of what I hold regarding the discussions to do with conversion.

[T12] Al-Khūnajī, *Kashf al-Asrār*, 130.11–133.6 [trans. Street, mod.]

[***conversion of universal negative propositions on the essentialist reading***]

Overall, if these [seven universal negative] propositions are taken on the essentialist reading, the demonstration we mentioned for their conversion goes through, the counter-examples are not compelling, and the proper view must be that conversion is correct.

[***the seven universal negative propositions with externalist readings***]

But if these propositions are taken on the externalist reading, none of them converts, due to the counter-examples given. Further, in this case the demonstration we have given for their conversion will not go through, because in this case the minor will be rejected as lacking the required force (*ghayr lāzim*), because it will mean "Everything that is B in existence is always and in general B." But on this reading, the proposition will be false if there are no Bs in [131] external existence; so the rejection is clear. Whereas on the first assump-

tion [sc. the essentialist reading], it means "Everything that would always be B, were it to come to exist, would in general be B, were it to come to exist"; and this is a primary proposition.

[*perpetuity, general conditioned, and general conventional universal negative propositions*]

The perpetuity, general [conditioned] and general [conventional] universal negative propositions convert as themselves in quantity and modality, otherwise their contradictories would be true and an impossibility would follow; this in two ways. *First*, and this is the method of al-Fārābī that Avicenna liked so well, is to join the contradictory of the converse to the original proposition such that it produces an impossibility (which is negating something of itself, perpetually in the perpetuity proposition, and when it is actually described [by the description of the subject term] in the two generals). *Second*, the method called ecthesis, which is: if "some B is J absolutely" is true, then there must be a specifiable thing which is both B and J; let that thing be D, so D is J and B, and so "some J is B" as an absolute, yet [we assumed] that no J was ever B; so this is absurd. The valuation of these propositions does not differ whether they are taken on the essentialist or the externalist reading, because the demonstration goes through on either assumption.

[*al-Rāzī's position on essentialist perpetuity negations, with replies*]

The Imām [sc. al-Rāzī] mentioned in the *Mulakhkhaṣ* that if the perpetuity proposition is taken on an essentialist reading, it does not convert as itself. He sought to prove this in three ways. *First*, given that writing is not necessary for man at any time, it is possible to negate it of him always. Were the conjunction of the two premises true (I mean, "no man is ever writing," and [the claim] that the perpetuity universal negative proposition must be convertible), "no writer is ever a man" would be true; but that is impossible, and so the conjunction is impossible. Since the first proposition is possible, then the impossibility of the conjunction must reside in the impossibility of the second; and so it is impossible for the perpetuity universal negative proposition to convert.

Second, sometimes [132] negating one thing of another always is possible, even while negating the second of the first is not possible. Thus, taken on the essentialist reading, the correctness of the converse is not necessary. This argument is close to the first, except that it gives the general rationale, while the first is a counterexample worked out in detail. *Third*, if the universal negative perpetuity proposition were to convert just as it is, then—because the demonstration

goes through—the universal affirmative necessity proposition would convert as a general absolute proposition.

Reply to the first: it doesn't follow from the impossibility of a conjunction of two propositions that one of them is impossible in itself: an absurdity may come about through their conjunction. Don't you see that each one of the two sides of a contradiction may be possible, neither entailing anything absurd, even though their conjunction is impossible and implies something absurd?

For instance "Zayd is writing" at a given moment and "Zayd is not writing" at that moment; similarly if one were taken as a perpetuity proposition and the other as an absolute proposition. The same goes for all contingent matters. If [al-Rāzī] claims that an absurdity follows from "No man is ever writing" without joining it to the other proposition, he has fallen into contradiction. But if his claim is supposed to mean that something absurd follows because of the other proposition, we reject that conditional. The rejection of the premises of the argument he has given here is quite obvious. This is also the answer to *the second argument*. *The third* doesn't touch us, given that we hold that affirmative actuality propositions convert as actuality propositions, as will be explained.

[*contrary to al-Rāzī's claim,* reductio *does establish the conversion of essentialist propositions*]

Al-Rāzī went on to claim, moreover, that the *reductio* proof will not go through if the proposition is essentialist. To the contrary, the fact that it does go through is clear. For if "Nothing which would be J, were it to exist, would ever be B once it exists" is true, then "Nothing that would be B, were it to [133] exist, would ever be J, once it exists" would be true. Otherwise, some B, were it to exist, would be J absolutely [i.e. at least once] once it existed. In which case we can form a syllogism thus: "Some B, were it to exist, would be at least once J, once it exists; and nothing J, were it to exist, would ever be B, once it exists." This yields as a conclusion: "some B, were it to exist, would never be B, once it exists," and that is absurd. What al-Rāzī puts forward as proof [against the conversion of the universal negative perpetuity proposition in the essentialist reading, were it to have gone through,] would also have gone through [for the same proposition] in the externalist reading, for the same reasons.

[T13] Al-Khūnajī, *Kashf al-Asrār*, 145.3–14 [trans. Street, mod.]

[***confusion has been caused by changing terminology***]

You should know that these judgments relating to conversion which we have mentioned don't differ much from the claims of the ancients, though they may differ from what recent logicians have said. If we were satisfied that, in order for something to be a subject, [it would be sufficient] that it be possible [for it to fall under the subject term], and not consider this thing as having [the subject term] *actually* affirmed of it (as al-Fārābī held), it would follow that the [universal] negative necessity proposition would convert as a necessity proposition. Affirmative possibility propositions would convert as possibility propositions. The conversion of actuality propositions wouldn't yield anything more than possibility propositions. And the syllogism in the first figure with a minor possibility proposition would be productive.

[All this] is in accordance with what should be clear to you after having acquainted yourself well with what came before, and having given due consideration to the propositions in accordance with the technical usage [of terminology]. But since the later scholars have changed the technical usage without changing the judgments they reached—such that the judgment was changed along with the difference in technical usage—they have been mired in nonsense.

Perhaps the Master [sc. Avicenna] hesitated over the conversion of actuality propositions as either possibility or absolute propositions just because of his hesitation over technical usage. And so when he says that they convert as possibility propositions, he doesn't consider affirmation in actuality with respect to the subject; but when he says that they convert as absolute propositions, he does do this. After all, the fact the absolute follows on this technical usage is all but patently obvious, so the Master would hardly have denied it.

[T14] Al-Abharī, *Khulāṣat al-Afkār*, 213.8–217.5

[***conversion of universal negative necessity propositions according to Avicenna***]

[Avicenna] claimed that the universal negative necessity proposition converts as itself, for four reasons.

First: if it is true that "Necessarily, no J is B," then it is also true that "Necessarily, no B is J." Otherwise, it would have to be true that "Some B is J by general possibility." But if that were possible, then from positing its occurrence no absurdity would follow. Yet [an absurdity] does follow: for if the truth of "Some B is J" is assumed, then it follows that both B and J are true of a single object (*dhāt*), and hence that "Some J is B." However, we started with "Necessarily, no J is B," so it follows that two contradictories are jointly true. This is absurd, because if both B and J are true of a single object, then "Some B is J" and "Necessarily, no J is B" [214] implies that "Necessarily, some B is not B." Which is absurd.

Second: if "Some B is actually J" is jointly true with "No J is necessarily B," then an absurdity follows, namely "Some B is not necessarily B." But the absurdity does not follow from "No J is necessarily B," because from a truth no absurdity can follow. Hence, it must follow from "Some B is *actually* J." So the truth of this is impossible, and since this is so, it follows that "Some B is J by general [one-sided] possibility" is false. Therefore, "No B is necessarily J," [which was to be proved].

Third: if "Necessarily, no J is B" is true and "Necessarily, no B is J" is false, it follows that "Some B is J by general [one-sided] possibility" is jointly true with "Necessarily, no J is B." Therefore, it may be that "Some B is actually J" is jointly true with "Necessarily, no J is B." But this is absurd, because the truth of the former together with the latter implies an absurdity.

Fourth: if "Necessarily, no J is B" is true, then "Some B is actually J" cannot be true, because "Some B is actually J" implies the truth of "Some J is actually B." The possibility of the implicand implies the possibility of the implicate. So if the truth of "Some B is actually J" is possible, so is the truth of "Some J is actually B." But this is absurd, because "Necessarily, no J is B" was assumed to be true.

[***criticism of Avicenna's account***]

These are the considerations which we have summarized from what [Avicenna] says in the *Shifā'* and elsewhere. But all this is unconvincing. [215]

As for the first: we do not concede that it would follow that two contradictories are jointly true. For on this assumption [sc. that "Some B is J"] the truth of J and B of a single object implies the truth of "Some J is B." But this does not contradict "Necessarily, no J is B in actual fact (*fī nafs al-amr*)." *When he says*, "if both B and J are true of a single object, then 'Some B is J' and 'Necessarily, no J is B' which lead to an absurdity," *we reply*: we do not concede that if "No J

is B *on this assumption*" and "No J is B *in actual fact*" are both true, then they yield the conclusion you mentioned. They would do so [only] if the truth of the negative necessity proposition were to persist on this assumption. But on what basis have you said that it persists? This would call for a [further] demonstration.

As for the second: we do not concede that if the absurdity does not follow from "Necessarily, no J is B," then it must follow from "Some B is actually J." For it may be that it follows just from the *combination* of [the premises].

As for the third: we do not concede that if "Some B is J by general [sc. one-sided] possibility" is true, there follows the possibility that "Some B is actually J" is jointly true with "Necessarily, no J is B." For it may be that one thing could exist together with another, even though its *actual* existence together with that other thing would be absurd. For it is true to say "Zayd is actually writing right now," and this could be jointly true with "Zayd is not writing by general [one-sided] possibility," even though the truth of the latter together with the former is actually absurd.

As for the fourth: we do not concede that the possibility of "Some J is B" to be true fails to remain (*ghayr thābit*). *When he says*, "'Necessarily, no J is B' is true," *we reply*: yes, but we do not concede that its truth precludes the possibility of "Some J is *actually* B," which means that [216] the truth of the proposition is [still] possible. What does preclude [the truth of] "Necessarily, no J is B" would be, "Some actual J is B by general [one-sided] possibility." But from the possibility that the proposition is true, there does not follow the truth of "Some actual J is B by general [one-sided] possibility." For the possibility that the proposition is true does not depend on the truth of J actually holding of any object. For the possibility of its truth obtains so long as J and B potentially apply to one of the essences.

[*conversion of general absolute, non-perpetual, and the two possibility propositions*]

As for general absolute, non-perpetual, and the two possibility propositions, they do not necessarily convert. For it is true to say "No human is capable of laughter" as a general absolute, as a non-perpetual existential, and as both a general [one-sided] and a specific [two-sided] possibility proposition, but its converse is not true.

[*a problem with the conversion of conventional propositions*]

As for the general and specific conventional propositions, they both convert to a general conventional proposition. For if "No J is B as long as it is J" or "No J is B as long as it is J, not always" is true, then "No B is J as long as it is B" is true as well. Otherwise, it would have to be true that "Some B is J insofar as it is B," and this [B] is J insofar as it is B and B insofar as it is J, so that "Some J is B insofar as it is J." But it was the case that "No J is B as long as it is J," so this is absurd.

But this calls for further inquiry. For the specific conventional must have a converse such that it applies, though not always, to some of the instances of the subject. For if "No J is B as long as it is J, not always" is true, it follows that "Every J is actually B." If that is the case, then its converse "No B is J always" is not true, because if "No B is J always" is true, then "Every J is actually B" and "No B is J always" together produce the conclusion "No J is always J," which is absurd. And if "No B is J [217] always" is not true, then it must apply to some instances of the subject, though not always.

Some of the later logicians claimed that only the specific conventional proposition converts. They argue for this by saying that if "No J is B as long as it is J, not always" is true, and "No B is J, not always," then so is "No J is B always," because it is possible that it is so always for some instances of the subject, but not always for some others.

[T15] Al-Abharī, *Khulāṣat al-Afkār*, 219.4–221.3

[***al-Rāzī's account of conversion: essentialist vs. externalist propositions, cf. T11***]

The Imām [*al-Rāzī*] *said*: the subject of a proposition is taken with reference to either its essence (*bi-ḥasab al-ḥaqīqa*) or to its extramental existence. If it is taken with reference to its essence, then the universal negative necessity proposition converts as itself, because if "Necessarily, no J is B" is true, meaning that J and B cannot possibly occur together in a single essence, then "Necessarily, no B is J" is also true. *We say*: we do not concede that it means what you mentioned; rather, it means that it is impossible for the object of which J is true also to be B in fact (*nafs*). We do not concede that this would imply that it is impossible for the object of which B is true also to be J in fact, such that the conversion would be correct.

As for the two conditioned propositions, [for al-Rāzī] they convert to a general conditioned, because of the argument he mentioned for the absolute necessary proposition. But the weakness [of that argument] applies here too.

As for the perpetual and the two conventional propositions, [for al-Rāzī] they do not convert. For it is possible that "No human is always a writer," but if it is converted to a negative perpetual proposition, from assuming [220] this possibility to occur, there follows an impossibility, namely "No writer is [always] a human." He says the same for the two conventional propositions. *We say*: we do not concede that the impossibility does not follow from assuming the possibility to occur. Rather, it follows from the whole, that is, the converted negative perpetuity proposition *together with* the assumption that the possibility occurs.

As for the remaining universal negative propositions, they do not convert because of a lack of modal matters.

As for the universal and particular affirmative propositions, whether they are actual or possible, [for al-Rāzī] they convert as a general possibility proposition, because if the truth of "Every J is B" is assumed, or "Some J is B" under any modality, then "Some B is J by general possibility." Otherwise, "No B is J by necessity" and "No J is B by necessity," and this is absurd. *We say*: we do not concede that the negative necessity proposition converts as itself. As for the proof he gave, again, it is unconvincing. *We also say*: we do not concede that what he mentioned is a *reductio*. For on the essential reading of the subject, no firm judgment applies as to the truth of [the proposition]. If one were to assume it to be true, the assumption itself may be absurd; [only] then would it lead to something absurd.[11]

The truth is that on the essential reading, if the subject is actual, then its converse is stronger than a general possibility. For if we assume the truth of "Some J is actually B," this implies that J and B are actually true of a single object. Therefore, "Some B is actually J." As for the two possibility propositions, this method does not apply to them.

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11 Al-Abharī here criticizes al-Rāzī's claim that universal and particular affirmative actuality and possibility propositions all convert as general possibles. Al-Abharī gives two reasons. First, al-Rāzī's proof for this claim depends on his assumption that necessity e-propositions convert as themselves, which al-Abharī denies. Second, al-Rāzī's *reductio* moreover is formally invalid, because it infers a contradiction from an unwarranted assumption, which may already be absurd; the same point is made in [T16]: "the absurd is not far from implying an absurdity."

If [the subject] is taken on account of its extra-mental existence, then the universal negative perpetuity proposition converts as [221] itself. The two conventional propositions convert as a general conventional. The affirmative actuality propositions convert as a general absolute, as the Master [Avicenna] mentioned. The judgments concerning the remaining proposition types are the same as the preceding ones on the essentialist reading, and you already know what deficiencies they have.

[T16] Al-Abharī, *Khulāṣat al-Afkār*, 221.5–222.12

[*criticism of the Rāzian account of conversion*]

Some of those who follow the Imām [al-Rāzī] in technical usage claimed that the universal negative propositions that do not convert as themselves, convert as a particular negative perpetuity proposition. They argued for that by saying that if the truth of "No J is B by general [one-sided] possibility" is assumed, then it implies "Nothing that is B by necessity is J always." Otherwise, "Some B is actually J by necessity" and "No J is B by general [one-sided] possibility" would together imply "Something [sc. some J] is both B by necessity and not B by general [one-sided] possibility," which is absurd. Since "Nothing that is B by necessity is always J" is true, and we have a true premise "Everything B by necessity is actually B," this converts to "Some actual B is B by necessity," and "Nothing that is B by necessity is always J," so "Some B is not always J," which was to be proved. The same can be proved for the remaining negative propositions.

On this basis, they claimed that the affirmative actuality propositions convert to particular necessity propositions. For if "Every J is actually B" is true, then "Some B is necessarily J." Otherwise, "No B is J by general possibility," so "Some J is not B always." But it was true that "Every J is actually B." This is absurd.

We say: we do not concede that "Something that is B by necessity is not B by general possibility" [222] is absurd on the assumption that "No J is B by general possibility" is true. We proved that the universal negative proposition, on the essential reading of the subject, is not true at all. Once its truth is stipulated, one might infer an absurdity, because it seems to us (*ʿindanā*) that its truth is absurd, and the absurd is not far from implying an absurdity.

This proponents [of the Rāzian view] also held that the negative necessity proposition, on the extramental reading of the subject, does not convert. For that

it would need to be true that "Nothing that is just now entering into this house is a donkey by necessity," while it needs to be false that "Nothing that is a donkey is just now entering into this house by necessity," because "Some donkey is possibly entering this house just now."

We say: we do not concede that "entering this given house just now" is a predicate for anything of which it is true to say that it is a donkey by general possibility. Rather, it is just the possibility of entering that arises just now, and this does not imply the possibility of a given entrance just now. For the possibility of Zayd's moving obtains before his actual motion.

[T17] Al-Abharī, *Khulāṣat al-Afkār*, 223.4–224.10

[***his own view on the conversion of simple modalized propositions***]

Let us now speak first of simple [modalized propositions]. In the case of the universal negations, the necessity and the perpetuity propositions convert to a universal negative perpetuity proposition. This is because if "Necessarily, no J is B" or "Always, no J is B" is true, then so is "Always, no B is J." Otherwise "Some B is actually J," together with the truth of "No J is ever B" would produce the conclusion "Some B is never B," which is absurd. The truth of the contradictory of the converse cannot be true jointly with the original proposition. But the original proposition is true; so there follows the falsity of the contradictory of the converse, and thereby the truth of [the converse].

As for the general conditioned and conventional propositions, they convert to a general conventional, because if "No J is B as long as it is J" is true, or is true by necessity, then "No B is J as long as it is B" is true. Otherwise, "Some B is J when it is B" is true together with "No J is B as long as it is J," so that "Some B is not B while it is B," which is absurd.

As for the general and intermediary absolute, and the general and intermediary possible, they do not convert because of the lack of a modal matter. For it is true to say, for the above modalities, that "No moon is eclipsed"; but its converse is not true, either as a universal or as a particular proposition.

[224] As for the universal and particular affirmative propositions: the general necessity and perpetuity propositions, as well as the general conditioned and conventional propositions, and the intermediate absolute, all convert to a particular intermediary absolute. For if "Every J is B" is true in one of these modal-

ities, then so is "Some B is J when it is B." Otherwise, "No B is J as long as it is B" is true, which together with the original proposition would produce an absurdity.

As for the general absolute, it converts as a general absolute. For if "Every J is actually B" is true, then "Some B is actually J." Otherwise, "No B is J always," which together with the original proposition would produce an absurdity.

As for the general and intermediary possible, their conversions are not known because there is no way to reach a proof.

As for the particular negative ones, they do not convert, because they lack modal matters.

[T18] Al-Ṭūsī, *Taʿdīl*, 183.5–183.16

[*why conversion is important*]

[*Al-Abharī*] *said*: what is meant by "following from it" is that the contradictory, together with the truth of the original proposition, implies an absurdity.

I say: the logicians use the proof by conversion only for propositions that actually do convert, because they need it to prove the productivity of all but the perfect syllogisms. So they establish them by conversion and reduction of the [imperfect] to perfect syllogisms. Other than that conversion itself is not a fundamental topic of inquiry, apart from [being used] for the sake of something else. This is why they placed the chapter on conversion at the beginning of the book on the syllogism, as if it were a preliminary or prerequisite for it, and postponed the discussion of contraposition—even though it has the same status as conversion in its utility, as we mentioned—to the [discussion of the] concomitants (*lawāḥiq*) of the syllogism, because it is not needed [to prove the productivity of imperfect syllogisms].

The author of this book [i.e. al-Abharī] made the proof of the converse the absolute means of establishing the syllogism, leaving aside the other proofs; according to him the proof of the syllogism has to come after it. Then, he mentioned in his explication of the universal the condition that the original [proposition] (*al-aṣl*) must imply the converse, and he explained this by the fact that the contradictory of the converse together with the truth of the original proposition implies an absurdity. But this terminology is unique to [al-Abharī], and he does not use it consistently in all places after first mentioning it.

[T19] Al-Ṭūsī, *Taʿdīl*, 183.17–185.8

[*critique of al-Abharī's first argument regarding the conversion of negative universal necessity propositions*]

[*Al-Abharī*] *said*: let it not be said that the negative universal necessity proposition converts as itself, for the following reasons.

First: if "Necessarily, no J is B" is true, then necessarily no B is J. Otherwise, "Some B is J by general possibility" [would be true]. And if this were possible, then no [184] absurdity would follow from the stipulation that the [possibility] occurs; but it does so follow. For if the truth of "Some B is J" is stipulated, it follows that B and J truly apply to a single object, so some J is in fact B. But we said that "Necessarily, no J is B." Thus two contradictories are implied to be jointly true, which is absurd.

Then he replied as follows: we say, concerning the first, that we do not concede that two contradictories are jointly implied. This is because the truth of B and J of a single object, on this assumption, imply the truth of "Some J, on this assumption, is B," which does not contradict "Necessarily, no J is B in actual fact (*fī nafs al-amr*)."

I say: the assumption that implies the truth of (a) "Some J, on this assumption, is B" either allows for the truth of (b) "No J is B, also on this assumption, by itself," or it does not. If it does, then on this assumption both contradictories may jointly be true; and from this it does follow that that assumption was an absurd one, which was to be shown. If on the other hand it does not allow for [the truth of (b)], then the contradiction persists between that which implies the truth of (a) on that assumption and that which is the case in actual fact (*fī nafs al-amr*), which undermines his argument as being merely dialectical.

The truth is this. The problem he mentions does not arise, because if the proposition implied on this assumption does not contradict what occurs in actual fact, along with the conditions for the contradiction between them [being satisfied], then he must first add a condition beyond what he mentioned, regarding the contradiction. Namely that one of the two contradictories is *assumed*, while the other occurs *in actual fact*. But how should this be possible, if two contradictories cannot jointly occur in actual fact? If *one* of them occurs in actual fact, it is impossible for the *other* so to occur, regardless of any assumption. As long as the other does not occur [in actual fact], no contradiction can be con-

ceived between them, because [contradiction] is something relational, which is grasped only once both related items are established.

[185] The final verdict (*ghāya*) on this topic is that on this assumption, it is required that two contradictories are either jointly true or jointly false. And as this is impossible, the impossibility of this assumption, which implies them both, is shown. But if the contradictory nature were to disappear, then there would no longer be any impossibility due to the [two contradictories] jointly being true or false, and it would no longer be possible to show in this way that something absurd follows from the assumption.

The upshot is that the concept of contradiction remains according to its nature that requires negation in all situations, regardless whether its two extremes are affirmed as an assumption, or as two assumptions, or as one assumption and one in actual fact (*fī nafs al-amr*). If its two extremes occur on a given assumption, we thereby know that this assumption is impossible. And if both are assumptions or one is an assumption and the other occurs in actual fact, then we judge that they are incompatible.

[T20] Al-Ṭūsī, *Taʿdīl*, 186.19–187.20

[***critique of al-Abharī's second argument regarding the conversion of negative universal necessity propositions***]

[*Al-Abharī*] *said*:

Second: "Some B is J in actuality" together with "No J is B by necessity" implies an absurdity, namely "Some B is not B by necessity." But the absurdity does not follow from "No J is B by necessity," because it cannot follow from a true [statement]. So it must follow from "Some B is J *actually*," as its truth would be absurd. And since it cannot be true, it follows that "Some B is J by general possibility" is false. Hence, "No B is J by necessity."

[187] *Then he replied as follows*: as for the second, we do not concede that if the absurdity does not follow from "Necessarily, no J is B," it must follow from "Some B is J actually." For it might follow from both, insofar as they are considered together.

I say: what [al-Abharī] objects to is the *reductio* syllogism; but his objection does not succeed in undermining it. If two premises together imply an absur-

dity, and it is impossible that two true premises imply an absurdity, we know that necessarily these two premises are not both true. But if one of them is known to be true, the falsity of the other is evident.

[…]

[187.10] *I say, then*: whenever "Some B is J actually" and "No J is B by necessity" are jointly true, then "Some B is not B by necessity." Here the consequent is false, thus so is the antecedent.

Moreover, I say: whenever it is *not* the case that "Some B is J actually," and along with this, "No J is B by necessity," [then] at least one must be true. The antecedent is true, thus so is the consequent.

Moreover, I say: either "Not: every B is J actually," or "Not: some B is J actually"; and either "Not: some[12] J is B by necessity" or "Not: no J is B in actuality," where at least one must be true. But "No J is B by necessity," so: "Not: some B is J in actuality." This is precisely the syllogism he adduces regarding the *reductio*, and it is correct, albeit not normally used by logicians.

So here he objects to something even while agreeing to something that means the same thing! How is this suitable for someone who claims to be engaged in verification, especially regarding books of the [rational] sciences that concern themselves with providing reliable rules of argument? It would be more the work of someone who takes their lead from the dialecticians, who twist words and do not stick to established meanings.

[T21] Al-Ṭūsī, *Taʿdīl*, 187.21–188.13

[***critique of al-Abharī's third argument regarding the conversion of negative universal necessity propositions***]

[*Al-Abharī*] *said*:

Third: if "Necessarily, no J is B" is true but "Necessarily, no B is J" is *not* true, there follows [from the falsehood of the second proposition] the truth of "Some B is J by general possibility," together with the truth of [the first proposition] "No J

12 Deleting *lā* since otherwise this proposition is identical to the following one.

is B." Hence, "Some B is J in actuality" may jointly be true with "No J is B." But this is absurd, because their joint truth implies an absurdity.

Then he replied as follows: as for the third, we do not concede that if "Some B is J by general possibility" is true, it follows that "Some B is J in actuality" and "No J is B by necessity" may jointly be true. For it may be that something's existence is jointly *possible* with another thing, while it is impossible that it actually exist with that other thing. Thus "Zayd is writing in actuality at this time" may jointly be true with "Zayd is not writing by general possibility" even though the former cannot be jointly true with the latter in actuality.

I say: there is no need to reduce the general possibility proposition to an actuality proposition, since together with the necessity major, it produces a necessity conclusion in the first figure according to the true method. The author of the book only performed this reduction because the productivity of this combination was unknown to him.

Then he objected to this in the way just mentioned; but his objection is unsound. For it is true that something possibly exists only if the existence of that thing is not conjoined to a possible existent, as in the example mentioned that he adduced, or to a necessary existent. For it is absurd that the possibility of that thing's existence be true [once it is so conjoined].

[T22] Al-Ṭūsī, *Taʿdīl*, 188.15–189.18

[***critique of al-Abharī's fourth argument regarding the conversion of negative universal necessity propositions***]

[*Al-Abharī*] *said*:

Fourth: if "Necessarily, no J is B" is true, it is not possible that "Some B is J in actuality" is also true, because "Some B is J in actuality" implies the truth of "Some J is B in actuality," and the possibility of what follows implies the truth of that from which it follows. So it is possible that "Some B is J in actuality" is true, because it is possible that "Some J is B in actuality" is true. But this is absurd, because we said that "No J is B by necessity" is true.

Then he replied as follows: as for the fourth, we do not concede that it would no longer be possible truly to say that "Some J is B."

As for his saying "'No J is B by necessity' is true," *we say*: Indeed. But we do not concede that its truth precludes the possibility of truly saying "Some J is B in actuality," because [189] what it means to say that "Some J is B in actuality" is possibly true just is that the proposition is possibly true. And what precludes the truth of "No J is B by necessity" is "Some J in actuality is B by general possibility." From the possibility that the proposition is true, it does not follow that "Some J in actuality is B by general possibility" is true, because the possibility of its being true obtains insofar as J and B are potentially said of one of the objects.

I say: the gist of his reply is to infer that something could occur that would be opposed to the true necessity proposition. Thus, "No J is B" is opposed by "Some J is B in actuality," in that the latter implies its contradictory, namely "Some J is B by general possibility." The possibility of its being true allows that it could [in fact] occur, yet it is known necessarily that the opposite of the true proposition cannot [occur].

As for his saying, "the possibility of its being true obtains insofar as J and B are potentially said of one of the objects," this is wrong. For that is close only to the truth of its possibility, and not the possibility of its truth. We say that it is *close* to the truth of its possibility, and not that it *is* the truth of its possibility, because the truth of its possibility is that J may be potentially said of this group of objects, and B [also said] potentially. But possibility of truth is not truth of possibility! The first, but not the second, may oppose a non-possible proposition, as it does in this case, by opposing the actuality proposition "Some J is B in actuality." This proposition opposes, insofar as it is possibly true, the necessity of the truth of "No J is B by necessity" insofar as it is true. And insofar as it is an actuality proposition, it opposes the same proposition, but does not contradict it if it is possible by a general possibility instead of in actuality.

[T23] Al-Ṭūsī, *Taʿdīl*, 189.19–192.8

[***critique of al-Abharī's fifth argument regarding the conversion of negative universal necessity propositions***]

[*Al-Abharī*] *said*:

Fifth: if "No J is B by necessity" is true, it is impossible that both [J and B] are conjoined in a single object; and if that is the case, "No B is J by necessity."

Then he replied as follows: as for the fifth, we do not concede that if "No J is B" is true, then it is impossible that both [J and B] are conjoined in a single object (*ijtimāʿ fī dhāt wāḥida*). Rather, what is impossible is that a J-object be conjoined with B (*ijtimāʿ dhāt al-jīm wa-l-bāʾ*). But you did not say that this [190] implies the impossibility that a B-object be conjoined with J.

I say: the impossibility of a J-object being conjoined with B does necessitate that a B-object cannot be a J-object. This is necessitated by the impossibility of a B-object being united with J. (And what is not an object (*bi-dhat*) cannot be described by J.) This is the demonstration of why it is necessary that the negative necessity proposition converts, without [needing to invoke] what was said above.

Moreover, if it is impossible that a B-object be described by J, yet it is stipulated as being described by it, then whatever is said to be J cannot be described by B, even though it is a B-object, which is absurd. *If it is said*: it's the stipulation that is absurd, because [the object] would fall under the class (*jumla*) of things said to be B, but at the same time would not fall under [that class]. *Then we say*: [admittedly,] if something that cannot be described as J were to fall under [that class], then something that cannot fall under it would do so. However, the universal restriction [sc. "No B is J"] may include, in the absence of the stipulation, everything that counts as impossible. The stipulation is needed just so that the subject thereby becomes suitable to be submitted to judgment. Custom requires that one make a judgment about something that is stipulated as actually belonging to the class of things for which judgment is possible. This is a fine point, and many have made a mistake in this regard. This is the reason for their carelessness.

[*Al-Abharī*] *said*: moreover, we say that the negative perpetuity proposition does not convert as itself, because it is possible that "No human is a writer, perpetually." If the negative perpetuity proposition converted as itself, then an absurdity would follow from the assumption that the possible occurs, namely, "No writer is a human."

Then he replied as follows: we do not concede this, because what you mentioned as absurd only follows from the assumption that the possible occurs, together with the conversion of the negative perpetuity proposition. And it may be that they only jointly imply an absurdity, but none of its parts alone imply it.

I say: this response does not dispel the mentioned objection that the negative perpetuity proposition does not convert. For the assumption that the possible occurs is, on this picture, just the truth of the negative perpetuity proposition. So, if the truth of the negative perpetuity proposition, together with its converse, implies an absurdity, it is absurd. This is why the joint truth of the original proposition [191] together with the truth of its converse would be absurd. And this was just what the objector meant.

The correct response is to say: what is meant by the conversion of a negative proposition is that its truth implies the truth of its converse, because the possibility of its being true implies the truth of its converse. For possible truth is, as it were, what is true both when it is [actually] true and when it is [actually] false.

Repeating the contradictory of the antecedent is not productive, let alone the consequent itself. It does not follow from the fact that the original proposition's truth implies the truth of the converse, that the falsity of the original proposition also implies the falsity of the converse, such that possible truth, together with truth or falsehood in the original proposition, would jointly imply the truth of the converse.

[*Al-Abharī*] *said*: you should know that the demonstration of the conversion of a proposition is achieved only when [the proposition] is true. When it is only assumed to be true, then [the demonstration] is not [achieved]. For if you say "No human is a writer" there follows "No writer is a human." Otherwise some writers would be humans on this assumption, so that some writers would not be writers, which is absurd. *But we* [sc. still al-Abharī] *say*: we do not concede that this is absurd, because this account assumes something false, and a falsehood may imply an absurdity, by being absurd either due to itself or due to something else.

I say: by "demonstration" he means his demonstration that he mentioned at the beginning of the chapter. He relies on that here; otherwise the weakness of a certain demonstration would not require any weakness in the demonstration as such. Now, his rejection of the absurdity is not correct, because the form of the syllogism is this: "If the contradictory of the converse proposition is assumed to be true, together with [the original proposition], a self-negation follows"; here the productivity [conditions] of the first figure apply. These are, according to [al-Abharī's] account, that it is productive if the two premises are assumed to be true. But the absurdity of self-negation follows [precisely] from

positing the antecedent. Hence, the joint [truth] of the contradictory of the assumed proposition true together with [the original proposition] is absurd.

The reason for [al-Abharī] to deny the convertibility is that he thinks that a conditional in which at least one [part] must be true does not imply a conditional composed of the contradictory of one of the parts and the other part itself. (We have already discussed this.) And this is why he only proves conversions by *reductio*. For him, a *reductio* is composed of reiterative syllogisms different from this one [and] from strict disjunctions.

[192] The negative proposition he adduces does not contain an absurdity on account of its matter, because this matter does not convert when[13] [the proposition] is absolute. A writer who is not writing, in the absolute sense, is neither absurd nor impossible. The defect here is not just that it is assumed to be true. Moreover, if this demonstration is not achieved, it does not follow that the mentioned conversion is impossible. For it may be that there is another proof for it.

As for his saying, "a falsehood may imply an absurdity, by being absurd either due to itself or due to something else," this is totally wrong. Otherwise, a [mere] falsehood would yield an impossibility. But [in fact] a possible falsehood does not imply an absurdity by itself.

[T24] Al-Kātibī, *Shamsiyya*, 219.5–221.15 (trans. Street, mod.)

[*summary of simple conversion*]

"Simple conversion" consists of placing the first part of a proposition second and the second part first, with the truth and quality remaining the same in both.

Regarding negations: if the negation is universal, there are seven modalities that cannot be converted, namely the two temporals, the two existentials, the two possibles, and the general absolute. This is because one cannot convert the strongest of them, the temporal, due to the truth of "necessarily, no moon is eclipsed at the time of quadrature, but not always"; and the falsity of "some of what is eclipsed is not a moon" by general possibility (which is the weakest of the modalities), because everything that is eclipsed is necessarily a moon. If the strongest does not convert, neither does the weaker; for if the weaker

13 Reading *idhā*.

did convert, so would the stronger (because what the weaker implies also follows from the stronger).

The absolute necessity and absolute perpetuity propositions convert as a universal perpetuity proposition, because if it is of necessity, or always, true, that "No J is B," then always, "No B is J." Otherwise, take "Some B is J" as a general absolute proposition; this, together with the original proposition, would produce "Some B is not J by necessity" for the necessary proposition, and "some B is not B, always" for the perpetuity proposition, which is absurd.

The general conditional and the general conventional both convert as a universal general conventional, because if it is of necessity, or always, true, that "No J is B as long as it is J," then "always, no B is J as long as it is B." Otherwise take "some B is J while B"; and this with the original proposition produces "some B is not B while it is B," which is absurd.

The special conditional and special conventional convert as a general conventional which is non-perpetual-for-some. The general conventional component of the converse follows because it is implied by both the general conditional and conventional propositions. And the component that is non-perpetual-for-some follows because, if it were false, "Always, no B is J" would be true, and this converts as "Always, no J is B." But we had "Every [220] J is B actually," so this is absurd.

Turning to the particulars: both the special conditional and conventional convert as a special conventional, because if it is of necessity, or always, true that "Some J is not B as long as it is J, but not always," then "Some B is not J as long as it is B, but not always" must be true. For we may suppose a real subject (*dhāt al-mawḍūʿ*) J to be D; thus D is J actually. And also, D is B, due to the non-perpetual predication by which B is negated of J. Furthermore, D is not J as long as it is B. Otherwise D would be J while B, and so B while J; yet it was the case J is not B as long as it is J; and this is absurd. And if B and J are true of D and but incompatible with each other, it is true that "some B is not J as long as it is B, not always," which is what is sought.

The remaining particular propositions do not convert. This is because "Necessarily, some animals are not human" and "Necessarily, some moon is not eclipsed at the time of quadrature, but not always" are true, while their converses are false when taken as general possible propositions. But the necessary proposition is the strongest of the simple propositions, and the temporal the

strongest of the remaining compound propositions. When they do not convert, neither does any other proposition, for the reason you have already learned: the conversion of the weak entails the conversion of the strong.

The affirmative, whether universal or particular, does not convert as a universal, due to the possibility that the predicate is more general than the subject (as in "every human is animal"). As to the modality: the necessary, the perpetual, the general conditional, and the general conventional convert as an absolute continuing. This is because if "Every J is B" is true under any of the four modalities mentioned, then "Some B is J while B." Otherwise, take "Always, no B is J as long as it is B" which, along with the original proposition, produces "Always, no J is J" in the case of the necessary and the perpetual, and "Always, no J is J as long as it is J" in the case of the two generals; these conclusions are absurd.

The two specials convert as absolute continuing propositions, restricted by non-perpetuity. The absolute continuing component is due to its being implied by the two generals. The non-perpetuity restriction from the original universal proposition is there because, were it false that some B is not J actually, then "Always, every B is J" would be true; we add this to the first part of the original proposition ("Necessarily or always, every J is B as long as it is J"), which produces "Always, every B is B." Then we add it also to the second part ("no J is B" by a general absoluteness), which produces "no B is B" by a general absoluteness; so it follows that two contradictories are conjoined, which is absurd. This is when the original proposition is universal.

To convert the particular of the special conditional and special conventional, posit [an instance of] the subject D that it is actually not C, otherwise [221] it would always be C, and thus always B, due to B's perpetuity as a function of the perpetuity of C. But what is implied here is false, due to the restriction of the original proposition by non-perpetuity.

The two temporals, the two existentials and the general absolute convert as a general absolute. This is because if "every J is B" is true under one of the five types mentioned, then "some B is J" by general absoluteness. Otherwise "Always, no B is J" would be true and, with the original proposition, would produce "always, no J is J"; this is absurd.

If you wish, you may when dealing with affirmative propositions convert the contradictory of the converse so that the contradictory of the original proposition (or what is stronger than it) would be true.

The status of the two possible propositions with respect to conversion or its failure is unknown, due to the fact that the demonstration mentioned to prove their conversion depends on the conversion of the negative necessary proposition as itself, and on the productivity of a possible minor with a necessary major in the first figure, and neither of these are verified. This in turn is due to lack of success in finding a proof which compels us to accept or reject the conversion of the possible proposition.

Affirmative conditional hypothetical propositions convert as a particular affirmative, and the universal negative as a universal negative; since if the contradictory of the converse were true, it could be ordered with the original as a syllogism producing an absurdity. And the negative particular does not convert because "sometimes: not, if this is an animal then this is a human" is true while the converse is false. Conversion in the disjunctive is inconceivable due to the lack of distinction between the two parts by nature.

[T25] Al-Urmawī, *Maṭāliʿ*, 45.6–48.5

[***simple conversion of affirmative propositions***]

[Simple conversion] is exchanging the terms with one another while retaining the quality and truth-value.

As for affirmative propositions, the two existentials, the two temporals, and the general absolute, regardless of how they are quantified, they convert as particular-quantified propositions, because the predicate may be more general, where the general absolute [converts] in one of [three] ways. The first way is to assume J, which is the subject, to be D, so that D is B and J. Now, "Some B is J absolutely," because of the third figure. The second is to add the contradictory of the converse to the original proposition, so as to conclude that the negation of something always follows from itself [sc. *reductio*], using the first figure. The third is to convert the contradictory of the converse, to revert it to the contradictory of the original proposition or its contrary.

The two perpetual and the two general propositions each convert to a particular continuing proposition in the ways mentioned above, while the two specified propositions convert as a non-perpetual, particular, continuing propositions. The particular continuing propositions [convert] as the two generals above. As for the non-perpetual propositions: because some B that is J as long as it is B, is not J absolutely (otherwise it would be J perpetually), [B] is J as

long as it is B, but not always. [46] The two possibles, meanwhile, do not convert, because it may be that an attribute can apply in two ways, only one of which holds actually. Hence, that attribute may be said in a second way to be possible, even though its predication is impossible for what has that attribute.

They alleged that the three mentioned ways [to establish the converse also] apply to the general absolute.

The reply to the first and the second is to reject the productivity of possibility minors in the first and the third figure. The reply to the third is to reject the convertibility of the negative necessity proposition as a necessity proposition.

[***simple conversion of negative universal propositions***]

As for the negative universal propositions, the two general propositions as well as the perpetual convert as themselves, in the ways stated above. The necessity proposition converts as a non-necessary perpetuity proposition, for the same reason we gave as to why the affirmative possibility proposition does *not* convert. The two special propositions convert as general propositions, along with the specification of non-perpetuity when they are particular-quantified; otherwise, one could affirm perpetuity of the universal proposition, then convert it to the original proposition as perpetual, leading to an absurdity. They do not convert as themselves, because "No writer is still while writing, but not always" is true, whereas "Nothing that is still is a writer as long as it is still, but not always" is false. For some still things are always still, like the earth. But if "non-perpetuity" does not mean non-perpetuity for every instance, but for all taken together (*fī l-kull*), then the two [special propositions] do convert as themselves. Perhaps this was the meaning intended by the older logicians when they said that they do convert as themselves.

The Imām [al-Rāzī] argued that the perpetuity proposition does not convert as itself, on the grounds that "writing" holds [only] possibly of "human," so its negation is possible perpetually. But if this possibility were to be realized perpetually, together with the converse of the negative perpetuity proposition, then "No writing thing is a human, perpetually" would be true, which is absurd. So, from assuming the possible it does not follow that it converts.

Response: it may be implied by both together, but the two possibles cannot both occur together.

[47] They also claimed that the negative necessity proposition converts as a necessity proposition in the above three ways (but you already know the response to this), and that a negation is only realized on one of the two sides.

To [*the latter*] *the response is*: the negation of the original proposition is between the essence of the subject and the description of the predicate. What is sought in the converse is the negation between the essence of the predicate and the description of the subject: how should we get one of these from the other?

As for the remaining seven propositions, they do not convert, because the modally strongest of them does not convert. The temporal proposition "No moon is eclipsed at such-and-such a time" is true, yet its converse is false, because everything that is eclipsed is necessarily a moon. Indeed, if we take the proposition on the essential reading, then the seven propositions do convert as particular perpetuity propositions, because in this case the essential reading is true: "No perpetual B is a perpetual J." Otherwise, "Some perpetual B is J, generally and absolutely," so "Some J is B perpetually," but we had "No J is B absolutely," so this is absurd. Since this is true, it is made the major premise, so "Every perpetual B is B absolutely" is true, and it follows from the third figure that "Some B is not J perpetually," which is what was sought.

A criticism [that has been aimed] at this consideration is not on point, because we deny that the converse is false on this consideration. If the eclipsed thing that is not the moon is impossible (and here the question is whether, if it existed, it would be eclipsed), then on this consideration it is not a moon. If we were to consider it on the essential reading, the possibility of the subject would not convert, as it does on the external reading.

[48] As for the negative particular propositions, none of them convert, because the subject may be more general—except the two special propositions. They convert as themselves, because the two attributes must jointly apply to a single object in order that the non-perpetuity of B's being denied of some J leads to denying them. This necessitates the truth of the converse. This is not the case with the general propositions because if they are negated in a single essence, it does not follow that B is true of them. For it may be that J is true of everything of which B is true, by necessity.

[T26] Al-Samarqandī, *Qisṭās*, 251.13–253.10

[*conversion of propositions with relational predicates*]

One may commit a fallacy in conversion if one of the two terms of the proposition is a relation to a genuine item (*amr muḥaṣṣal*), so that one may think that only this genuine item is the subject or the predicate. For example, "Every king is on (*ʿalā*) a throne," "Every peg is in the wall," or "Every old man was young." Here one might think that the converse is "Some throne is on a king," "Some wall is in a peg," or "Some young man was old." But once it is known that the predicate in these propositions is a relation, the problem disappears. For "Some things on a throne are kings" is true, as are "Some things that are in a wall are pegs," and "Some of the people that were young are old men." But this restriction is only due to the genuine item. Thus, if the relation were to something not genuine, it would be true to say "Some human is on a non-horse" or "Some non-human is on a horse" [that is, here the conversion would be unproblematic]. Then it is true that "Some non-horse is on a human" and "Some horse is on a non-human."

[253] Al-Kashshī recounted a fallacy of this sort handed down from the ancients, as follows: it is true that "No body is extended in space infinitely." Together with the falsity of its converse, "No thing extended in space infinitely is a body," it is necessarily the case that "Every thing extended in space infinitely is a body." [But this is absurd, as there is no infinitely extended body.] As a solution, he said that what is denied of the body is only infinity, because extension in space cannot be denied of a body. In this case "Nothing that is infinite is a body" is true.

But this is unconvincing. For if the whole [predicate] is not true of it, then it must be denied of it, and the problem comes back again. Instead, the answer is that if the proposition is taken on an external or essential reading, the falsity of the converse is precluded, and in this case the contradictory of the converse is false. If [the proposition] is taken mentally, though, then the truth of the original proposition is precluded, and in this case its contradictory is true in the mind. But God knows best!

[T27] Al-Ḥillī, *Asrār*, 84.11–86.16

[***reminder of the positions the old logicians held regarding simple conversion***]

Here we must mention some of the positions that are different from what we have established, explain why they are wrong, and discuss the doubts and solutions [raised with regard to] them.

We say then: some of the older logicians took the position that the absolute universal negative proposition converts as itself; in the case where the absolute particular affirmative proposition is true, it would convert as itself, and there would be a contradiction between the two absolute propositions. But we have already shown the falsity of these principles.

In support, Abū Naṣr [al-Fārābī] alleged that when we put "Some J is B"—the contradictory of the [negative] absolute—with the original proposition, which is "No B is J absolutely," then it follows that "Some J is not J," which is absurd. Hence, the converse is correct. The Master [Avicenna] approved of this. But this is unconvincing. For the conclusion is only absurd [85] if it is a continuing proposition (*ḥīniyya*).

Abū Naṣr [al-Fārābī] approved of a new argument, which was to say that "No J is B" requires that J is distinct (*mubāyin*) from B, and if one thing is distinct from another, then also vice-versa [hence, "No J is B" would imply "No B is J"]. The Master [Avicenna] neutralized this argument in the *Shifā'* by saying that it assumes what is to be proved. For "distinctness" is used with several different meanings, one of which is negation, and this is the meaning relevant here. So it is as if they said: "B is negated of J, so J is negated of B," but this is the same as what was to be proved.

Some took the position that the particular negative proposition converts as a two-sided possibility proposition, because the negation is implied by the affirmation, and the affirmation converts as a particular proposition, which can then be turned into a negative one. But this is wrong. For the affirmation of a two-sided possibility converts as a one-sided possibility, and this cannot be turned into a negation.

[***later logicians on the conversion of negative propositions***]

Some of the later logicians held that the seven negative propositions that we said do not convert, do in fact convert as particular negative perpetuity propos-

itions, if they are essential (*ḥaqīqiyya*); but do not convert if they are external (*khārijiyya*). *As for the first*, this is because if "No J is B" in any of the seven [simple] modalities is true, then "Some B is not J perpetually" is also true, because in this case "Everything that is B perpetually is B in general," and "Nothing that is B perpetually is J perpetually." And in the third figure these two imply the sought conclusion. Now, the minor premise is evident. But if the major is not true, then "Some perpetual B is J absolutely" is true. Now we turn this into the minor premise for the original proposition and it follows that "Some perpetual B is not B in any of the modalities," which is absurd. Regarding the two possibility propositions, the middle term of the syllogism must be qualified as necessary. For otherwise, the *reductio* cannot be completed when it is specified by perpetuity alone. *As for the second*, the same criticism that we have mentioned applies.

Let it not be said: the criticism hinges on the essential and external reading [of the proposition]. *For we say*: we deny the falsity of "Some eclipsed thing is not a moon" on the essential reading, because we [86] take the subject essentially with regard to what is impossible and possible. Even if an eclipsed thing that is not a moon is impossible, it would [still] be an eclipsed thing but not a moon on the assumption that it existed. But the mentioned proof does not work for external readings, because it is impossible that its minor premise be impossible.

[*The later logician*] *said*: given that the seven negative propositions convert as we said, it follows that the affirmative actuality propositions convert to particular necessity propositions. Otherwise, if the negative possibility proposition is true, it converts to a particular negative proposition that is perpetually contrary or contradictory to the original proposition. *Let it not be said*: that if what you said is true, then the two negative universal specific propositions are not true, because the affirmative part converts to a particular necessity proposition, and the negative part as itself, so that something is true together with what is more specific than its contradiction. *For we say*: we do not concede that the two negative propositions are false.

You should know: this mistake arises simply from taking the subject in the proposition as having impossible instances that fall under it, as we have explained earlier; but this falls under the heading of ignorance. For it follows from this that no universal proposition is ever true. *If he says*: "Necessarily, no J is B," then here the impossible is considered as "The J described as B, despite being impossible, is still B on the assumption of its existence," then it is true that "Some J is B,"

and false that "Necessarily, no J is B." But logic is an instrument fashioned for protecting the mind from error; it isn't to be used for conjuring up the kernels of fallacies!

[T28] Al-Ḥillī, *Asrār*, 86.18–88.17

[*first "secret": the conversion of negative necessity propositions*]

Among the issues they raised doubts about, there is the conversion of the negative necessity proposition as itself. They claimed that it converts as a perpetuity proposition, and [proved this] by *reductio*. For the proof that it converts as itself rests on the productivity of [syllogisms with] possibility minors—for this issue we have already provided the verification—and on the convertibility of the affirmative possibility proposition—but this has been rejected. So [the proof ultimately] rests on the conversion of the negative possibility proposition as itself, which is circular.

[87] But [this refutation] is in error. A possibility proposition may be stipulated as being absolute, and on this assumption it converts as an absolute. From this follows the possibility of the converse, which is what was claimed, but without circularity.

They said: the existence of a description may be possible in two ways, one of which could be affirmed without the other. Then, "Everything that exists in the second way has that attribute by possibility" is true, whereas "Some of the things that have that attribute in actuality exist in the second way" would not be true. For everything that actually has that attribute exists only in the first way, without necessarily existing in the second way.

I say: the falsity of the converse follows only insofar as the judgment is specified as concerning what exists extramentally, which is what they called the "external." But we have already presented the verification of this issue above.[14]

They also applied this criticism of the possibility proposition to necessity propositions: if "Nothing that has this attribute exists in the second way" is true, then its converse is not true. But the reply mentioned above also applies here.

14 At *Asrār*, 65.

The upshot is that the negative necessity proposition and the affirmative possibility proposition mutually imply the converse, because the demonstration of one of them is completed by means of the other.

But they objected to this too, saying: we do not concede that this implies two contradictories, because when B and J are affirmed as true of a single object on this assumption—that is, on the assumption that the possibility actually occurs—it follows that "Some J is, on the above assumption, B" is true. But this does not contradict "Necessarily, no J is B in actual fact (*fī nafs al-amr*)."

Response: in themselves, the two contradictories cannot both occur together in actual fact. If one of them is affirmed in actual fact, the other cannot possibly do so, but [can hold only] as an assumption. As long as the other does not occur, no contradiction is conceived, because it is a relational item, and so can be grasped only so long as both relata are affirmed. [88] Therefore, if it is correct that what is [merely] assumed does not contradict what occurs in actual fact, then one cannot conceive any contradiction. It needs to be understood that something may be true in actual fact without being true when it is assumed, and this doesn't eliminate the contradictory nature of the contraries.

The final verdict (*ghāya*) on this topic is that on this assumption, it is required that two contradictories are either jointly true or jointly false. And as this is impossible, the impossibility of this assumption, which implies them both, is shown. But if the contradictory nature were eliminated, then there would no longer be any impossibility due to the [two contradictories] jointly being true or false, and it would no longer be possible to show in this way that something absurd follows from the assumption. The upshot is that the concept of contradiction remains according to its nature that requires negation in all situations, regardless whether its two extremes are affirmed as an assumption, or as two assumptions, or as one assumption and one in actual fact (*fī nafs al-amr*).[15]

If what is assumed is not contradictory to what is so in actual fact, then so long as the conditions for contradiction apply, a condition additional to what was mentioned must be stipulated for a contradiction [to occur]. Namely that one of the two contradictories cannot be an assumption when the other is so in actual fact. This is what some of the verifiers mentioned.

15 This paragraph is quoted from al-Ṭūsī's *Taʿdīl*, [T19] above.

We say: a contradiction only needs to be affirmed in the mind. If this eminent scholar meant by "hypothetical affirmation" an affirmation in the mind, then this is conceded. But when he says "the joint presence of contradictories, when assumed, implies the impossibility of this assumption," this claim is denied. If on the other hand he meant by "hypothetical affirmation" that which is affirmed on the assumption that something is stipulated as being the case, or not being the case (and this is the generally accepted meaning of "hypothetical affirmation"), then his argument does not go through.

[T29] Al-Ḥillī, *Asrār*, 91.20–92.16

[***second "secret": the conversion of the negative perpetuity proposition***]

Among the issues about which some of the later logicians raised doubts is the conversion of the negative perpetuity proposition as itself. For it may be [92] true to say "No human is writing, perpetually," but if the negative perpetuity proposition converts as itself, then an impossibility will follow from assuming that something possible occur, namely "Nothing that writes is a human."

Some of [the later logicians] responded to this by saying that the impossibility follows from assuming the occurrence of the possible together with the conversion of the negative perpetuity proposition. It may be that these *jointly* lead to an impossibility, but neither of them leads to it as [separate] parts (*min ajzā'ihi*). But some of the later logicians say that this does not dispel the objection, because assuming the occurrence of the possible on this picture is just the same as the truth of the negative perpetuity proposition, and if the negative perpetuity proposition being jointly true with its converse leads to an impossibility, then it is itself impossible, and so is the conjunction of the original proposition and its converse. This was the point of the objection.

To this they reply: what is meant by the conversion of the negative perpetuity proposition is that its *truth* implies the truth of its converse, not that the *possibility of its truth* implies the truth of its converse. For just as the possibility of the truth may be true together with its [actual] truth, so may it be true together with its [actual] falsity.

I say: this calls for further inquiry. For the possibility of what is implied does imply the possibility of what implied it.

And some of the later logicians responded that the negation is of each single [instance], perpetually, but even if that is possible, the truth of the negation of the *whole* is impossible. Moreover, this applies to the external [reading] just as it does to the essential reading.

I say: this is unconvincing. For the negation of the whole implies the negation of each of its instances, perpetually. And the second reply only adds to the problem, because the rejection applies to the external but not to the essential reading.

[T30] Al-Ḥillī, *Asrār*, 92.18–93.6

[***third "secret": the conversion of the specific conventional proposition***]

The author of the *Baṣā'ir* [i.e. al-Sāwī] held that the specific conventional proposition converts as itself. This on the grounds that, if [a specific conventional proposition] is true perpetually or necessarily, it converts to what contradicts the original proposition. But the later logicians reject this, saying that "No writer is at rest while writing, [93] not perpetually" is true, whereas "Nothing at rest is writing while at rest, not perpetually" is not true. For something that is at rest may perpetually be denied to be writing, like the earth for example.

We say: this conventional proposition is composed of a general conventional that converts as itself, and a general absolute that converts as a particular proposition distinct from the first. So the converse must be non-perpetual for some [instances], according to what has been said above. Perhaps the author of the *Baṣā'ir* held his position based on terminology he took over from the Master [Avicenna], in that the "non-perpetuity" specified by the universal proposition refers to the totality of instances, and not to every single one.

[T31] Al-Ḥillī, *Asrār*, 93.8–94.2

[***fourth "secret": the conversion of the affirmative necessity proposition***]

Some older logicians held that the affirmative necessity proposition converts as a necessity proposition. For if it were to convert as a non-necessity proposition, the converse would convert as a non-necessity proposition as well, because if something necessary converts to something non-necessary, then all the more should something non-necessary convert to something non-necessary. But, the converse of a converse is the original proposition!

But this is to overlook that the necessary and the non-necessary do each convert to the other. Consider for example the truth of "Necessarily, everyone laughing is a human" and the necessary falsity of its converse [i.e., "Necessarily, every human is laughing," because it is only possibly true]. Some of the later logicians held that [the affirmative necessity proposition] converts as a possibility [proposition], but one that does not come to exist, like when one assumes a human who never writes during the time of their existence.

Some of the verifiers countered this by saying that this denies the original proposition. For the original proposition required the affirmation of "writer," of whom "humanity" was affirmed by necessity. But as long as "writer" is not affirmed by necessity, neither will "human" be. But if ["writer"] is affirmed, and it is affirmed that [the writer] is human, then it is affirmed that this does obtain, just insofar as [writer] is human.

I say: this argument is correct, but it contradicts what they said in the beginning, namely that the universal restriction, without any stipulation, included everything that counts as impossible, and that the need for the stipulation was to make the subject suitable for [94] having something predicated of it. But the stipulation requires that the predicate is applied to what is stipulated as actual. This minute detail leads to a fallacy if it is neglected.

[T32] Al-Ḥillī, *Asrār*, 94.4–15

[*fifth "secret": the conversion of the affirmative two-sided possibility proposition*]

Some of the older logicians held that the affirmative two-sided possibility proposition converts as itself, on the grounds that we say "Every animal possibly is asleep, just insofar as it is sleeping (*min jiha mā huwa nā'im*)," and it is true that "Some of the things that sleep are such that, just insofar as they are sleeping, they possibly are animals," because "animality" does not have "sleeping" apply to it by necessity, even though when sleeping, it does apply necessarily.

But the Master [sc. Avicenna] objected to them, saying that this was a fallacy. *First*, because the phrase "just insofar as it is sleeping" is taken as a part of the predicate in both the original and the converse proposition; but it must be turned into a part of the subject in the converse, so that we have "Something that sleeps, insofar as it is sleeping, possibly is an animal." At which point the falsity becomes obvious, because the sleeping thing just insofar as it is sleep-

ing is not animal, nor anything else apart from sleeping. *Second*, because even if this example were correct, it would not lead to the desired conclusion. The conversion of a proposition concerning the matter [of the proposition] does not require its conversion absolutely. *Moreover*, we say "Every human is capable of laughter by two-sided possibility," which does not convert as itself.

[T33] Al-Ḥillī, *Asrār*, 94.17–20

[***sixth "secret": the conversion of conditional and disjunctive propositions***]

The judgment concerning the conversion of conditional propositions is the same as that of categorical propositions. As for disjunctive propositions, no conversion can be conceived for them, because none of its parts is yet determined by its very nature. Some of the later logicians raised doubts about this, because of a doubt about the productivity of conditional propositions. But the verification regarding the truth of this matter shall be presented [later].

CHAPTER 13

Demonstration

One of the biggest differences between Avicenna's own logic and the logic that was achieved by the end of the 13th century was the waning of interest in the topic of demonstration (*burhān*). Where Avicenna followed the Greek commentators and earlier authors of the Islamic world, like al-Fārābī, in seeing demonstration as the culmination of the logical arts, it was relatively deemphasized in our authors.[1] This may be in part a legacy of Avicenna himself. His *Shifāʾ* contains an entire book on demonstration, which presents an elaborate logico-epistemological theory that has been given expert presentation in a recent monograph.[2] But in his *Ishārāt* he spends no more than a handful of pages summarizing topics having to do with the syllogism, including demonstration. As he points out in [T5], demonstrations are not only valid syllogisms with sound premises, but must abide by a number of other constraints to ensure that the conclusion reached in the proof is certain. By contrast, logic after al-Khūnajī was more concerned with simple validity. As we've seen in other chapters, the later logicians were fascinated by arguments from false and even impossible premises.

Another factor here may be that al-Khūnajī's own *Kashf* remained unfinished. It ends with discussions of connective hypothetical syllogisms, just before material on demonstration would normally be treated. His student Ibn Wāṣil also spends little time on the material at the end of his commentary on al-Khūnajī's *Jumal*. As al-Kātibī notes, Fakhr al-Dīn al-Rāzī's treatment of demonstration in the *Mulakhkhaṣ* is limited for a different reason, namely that he focuses on raising skeptical problems [T13, T21]. Following suit, al-Kātibī's massively influential logical textbook, the *Shamsiyya*, merely mentions in passing the contrast between syllogisms built on certain and uncertain premises [T19], before concluding his treatise with a short summary of the parts of the sciences [T20]. Likewise al-Urmawī's handbook *Maṭāliʿ al-anwār* no longer makes any substantial mention of demonstration: of the over

1 F.A.J. de Haas, M. Leunissen, and M. Martijn (eds), *Interpreting Aristotle's Posterior Analytics in Late Antiquity and Beyond* (Leiden: 2010); R. Strobino, "Avicenna's Use of the Arabic Translations of the *Posterior Analytics* and the Ancient Commentary Tradition", *Oriens*, 40 (2012), 355–389; R. Strobino, "Varieties of Demonstration in Alfarabi," *History and Philosophy of Logic* 40 (2018), 42–62.

2 R. Strobino, *Avicenna's Theory of Science: Logic, Metaphysics, Epistemology* (Oakland: 2021).

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100 pages, less than half a page is dedicated to demonstration [T27]. These examples suggest that demonstration was no longer considered a key topic, especially for logical instruction. Particularly telling is the offhand remark at the end of [T28], where al-Samarqandī dismisses all the constraints placed on demonstration as being peripheral to the main business of logic, namely tracking relations of productivity and modality. But this is not to say that the topic of demonstration fell out of favor completely. To the contrary, al-Kātibī discussed demonstration at greater length in other works, like the *Jāmiʿ al-daqāʾiq*, and a highlight of the material we present in this chapter is the aforementioned battery of skeptical arguments found in Fakhr al-Dīn and al-Kātibī's responses.

Before we get to that, let us go back to the more basic question of what a demonstration is, and what it is for. In general, for Avicenna the point of Aristotle's *Posterior Analytics* is to show how we may reach true definitions and certain assent [T3], cf. [T6]. Having dealt with definitions elsewhere in this volume, we can here focus on assent, especially (according to al-Kātibī in the *Shamsiyya*) assent to propositions that ascribe an extrinsic predicate to the subject-matter of a science [T20]. The fact that the premises, and hence conclusion, of a demonstrative syllogism possess certainty distinguishes this sort of syllogism from other types, like rhetorical or poetic syllogisms [T17, T29]. Ultimately, in the sciences we want to give demonstrations that explain *why* the predicate in the conclusion holds true of the subject. But in addition to these "why-syllogisms" there are also "that-syllogisms," which answer the preliminary question of "whether" the predicate in fact holds of the subject, a contrast already drawn by Aristotle [T2], see also [T8, T10, T19, T29]. These also count as demonstrations. The role of the middle term varies depending on whether we are dealing with a why-syllogism or that-syllogism. In the case of a why-syllogism it of course provides the reason why the predicate of the conclusion holds of the subject [T9, T30]. Note that the usual qualification applies here, that the predicate could hold according only to a descriptional (*waṣfī*) reading, or with a temporal restriction. That is, we could demonstrate that a predicate X holds of a subject only insofar as that subject is described as Y, or only for as long as the subject is Y [T7, T12].

To avoid a problem first raised by Aristotle in *Posterior Analytics* 1.2, the theory of demonstration requires that there are indemonstrable principles [T1]. Otherwise, we would have a situation in which each premise in every demonstration needs to be established by a further demonstration, leading to an infinite regress or circle [T7, T13]. Where then are we going to get these certain premises that need no further proof, which we can call "principles"? Avicenna provides a list of 14 possible syllogistic principles [T4], only some of which are

fit to be used in demonstrations: those grasped immediately or in a "primary" way (*awwaliyyāt*), those taken from observation (*mushāhadāt*), things known by testimony (*mutawātirāt*), and premises taken directly from methodic experience (*mujarrabāt*) or intuition (*ḥadsiyyāt*) [T14, T17, T19, T27].[3] Abū al-Barakāt al-Baghdādī is skeptical that mere induction could supply premises of the necessary certitude; this was also Avicenna's view, but Abū al-Barakāt ascribes the claim to Aristotle.[4]

And here we arrive at the remarkable critique of demonstrative theory found in al-Rāzī.[5] First, he argues for a much more restrictive position that would allow only *primary* premises as principles of demonstration [T14, T15]. "Primary" truths are identical with things known "necessarily," in the jargon of the *mutakallimūn*. All other knowledge would be derived or inferential. Avicenna's list of types of certain proposition was rather broad-minded or "tolerant," as it included even premises taken from reliable testimony.[6] Against this al-Rāzī argues that demonstrations should proceed only from principles that have the *maximal* degree of certitude. He thus suggests the test of comparing any putative principle with another one that has that degree of certitude. This is of course very restrictive: the idea would be that if any premise seems even marginally less certain than, say, "one is half of two," then one should demand proof for it. Good luck to any scientist who wants to proceed in this fashion. So it is quite reasonable when al-Kātibī replies that the test is too demanding, and suggests that acceptable premises could possess a range of certainty [T21]. To put it another way, the principles of demonstration would only have to pass a certain threshold of certainty, without necessarily being as certain as anything could be. Here it may be noted that in this debate, al-Rāzī seems to focus on the idea of *subjective* certainty, as illustrated by his invitation to reflect on two pro-

3 For intuitive premises as principles see our chapter on Intuition in our forthcoming volume on Physics and Psychology, [T12].

4 For the contrast between mere induction and methodic experience see J. McGinnis, "Scientific Methodologies in Medieval Islam: Induction and Experimentation in the Philosophy of Ibn Sīnā," *Journal of the History of Philosophy* 41 (2003), 307–327; J. Janssens, "'Experience' (*tajriba*) in Classical Arabic Philosophy (al-Fārābi-Avicenna)," *Quaestio* 4 (2004), 45–62. For Aristotle on induction see e.g. T. Engberg-Pedersen, "More on Aristotelian *epagoge*," *Phronesis* 24 (1979), 301–317; L.A. Kosman, "Understanding, Explanation and Insight in Aristotle's *Posterior Analytics*," in E.N. Lee et al. (eds), *Exegesis and Argument* (Assen: 1973), 374–392.

5 See also T. Street, "Faḫraddin ar-Rāzīs Critique of Avicennan Logic," in D. Perler and U. Rudolph (eds), *Logik und Theologie: Das Organon im arabischen und im lateinischen Mittelalter* (Leiden: Brill, 2005), 99–116.

6 On this see D.L. Black, "Certitude, Justification, and the Principles of Knowledge in Avicenna's Epistemology," in P. Adamson (ed.), *Interpreting Avicenna: Critical Essays* (Cambridge: 2013), 120–142.

positions and see which one "feels" or "seems" more certain. By contrast, al-Ṭūsī in [T18] imposes both subjective and objective criteria for the sort of certainty required in demonstration.

In any case, al-Rāzī is not yet done. He moves on to raise five problems, each of which threatens to undermine the whole enterprise of offering demonstrative arguments [T16]. Al-Kātibī offers a fairly lengthy response to each [T22, T23, T24, T25, T26], whereas al-Urmawī simply alludes to the existence of these doubts and declines to deal with them given the limited aims of his textbook [T27]. Each of al-Rāzī's doubts would be worth extended discussion, especially along with the astute replies by al-Kātibī. But to make a long story short, the problems are as follows: 1. Some things that seem maximally certain are in fact not, since they could be invalidated by a divine miracle. 2. As noted later in the famed "Carroll's Paradox," the validity rule for an inference is itself in need of proof. 3. An argument from philosophical practice: the philosophers may speak grandly of demonstrations, but in their scientific works they constantly use premises that are uncertain (again he uses a subjective test here to convict the philosophers' principles of uncertainty). 4. In addition to assenting to a premise as certain, one should also assent to the second-order claim that the premise is certain, and the third-order claim that this second assent is also certain, and so on. This yields a regress of conditions that would need to be satisfied before one could take oneself to have beliefs that are suitable for use in demonstration. 5. The philosophers present conflicting positions, which cannot all be certain; and when confronting the conflicts, the dispute is undecidable (as the ancient skeptic Sextus Empiricus would put it).

The concluding remarks found at the end of both al-Rāzī's sequence of problems [T16] and al-Kātibī's responses [T26] make clear the fundamental disagreement between them. For Fakhr al-Dīn, there is at the very least a dark shadow over all supposedly demonstrative science. He even adduces a sixth, meta-level problem, namely that any response to the five foregoing issues would itself need to involve some kind of demonstrative proof. For al-Kātibī, though, the solution is simply not to worry about it so much. If I hold a proposition with certitude, that is enough, and I don't need to bother with second-order judgments about that belief, or with resolving sophistries about whether certitude is possible in the first place.

Texts from: Aristotle, Avicenna, Bahmanyār, al-Sāwī, al-Suhrawardī, Abū al-Barakāt, al-Rāzī, al-Abharī, al-Ṭūsī, al-Kātibī, al-Urmawī, al-Samarqandī, al-Ḥillī

[T1] Aristotle, *Posterior Analytics A*, 71^{b}9–22 [trans. Barnes, mod.]

[*scientific demonstration proceeds from a set of well-understood axioms*]

We think we understand something without qualification (*haplôs*), and not in the sophistical way, that is, accidentally, when we think we know of the explanation because of which the object holds that it is its explanation, and also that it is not possible for it to be otherwise. [...] [71^{b}19] If to understand something is what we have posited it to be, then demonstrative understanding in particular must proceed from items which are true, primitive, immediate, and better known than, prior to, and explanatory of the conclusions.

[T2] Aristotle, *Posterior Analytics B*, 89^{b}23–90^{a}34 [trans. Barnes, mod.]

[*the four scientific questions can be reduced to two: is there a middle term? what is it?*]

The things we seek are equal in number to those we understand. We seek four things: the fact, the reason why, if something is, what something is (*to hoti, to dioti, ei esti, ti estin*). When we seek whether this or that is the case, setting down a plurality of terms (e.g. whether the sun is eclipsed or not), we are seeking the fact. [...] [89^{b}36] So these are the things which we seek, and know by finding them, and this is how many there are. But when we seek the fact, or if something is, without qualification, we are seeking whether or not there is a middle term for it. And when, having come to know either the fact, or if it is (either in part or without qualification), we seek the reason why or what it is, we are then seeking what the middle term is. [...] [90^{a}5] Thus it results that in all our searches we seek either if there is a middle term or what the middle term is. For the middle term is the explanation, and in all cases it is the explanation which is being sought. [...] [90^{a}31] We say then that to know *what* something is (*to ti estin*), is the same as to know *why* it is (*dia ti estin*), either why this is without qualification, or why one of its predicates is, or why it is among the predicates, e.g. that it has two right angles, or that it is greater or less.

[T3] Avicenna, *Shifāʾ, Manṭiq, Burhān*, 53.1–18

[*aim and scope of the* Book on Demonstration]

This book informs us about the components (*mawādd*) which, when they are made the terms of a syllogism, then the syllogism yields certainty. This is the

demonstrative syllogism. [The book also] informs us about the components which, when they are made the parts of a definition, then the definition yields complete conception [of that which is defined].

It is appropriate that the conception should in some sense be made the principle for assent. This is because every object of assent is an object of conception, but not vice-versa. For the meanings of simple utterances and the meanings of compound utterances, when they are not put together to make up a categorical proposition, are all objects of conception, but not of assent. Categorical propositions, though, are objects of both conception and assent. But this is so in two [different] ways. For conception, in that its meaning is established in the soul, like when you say "human is animal"; for assent, because its meaning is related to the state of the thing in the soul, just as with any conception there arises for it an intelligible form of the nexus (*nisba*) that holds between the two terms. The same goes for its two terms as existing in actual fact (*fī nafs al-amr*). This being so, assent resembles a complete conception in a way.

All the remaining types of conceptions, the ones that don't lead to assent, are kept out of the sciences. Only those that lead to assent are sought in the sciences. This being so, it might [seem] that this book has to do only with the syllogism, and not definition, because it is called *Book on Demonstration* in this sense [of the term "demonstration"]. But in truth it is a book on both demonstration and definition.

Now that we have mentioned the aim of the book, which is to inform [the reader] about the ways leading to certain assent and real definitions, the benefit of the book is obvious: it is to reach certain items of knowledge and real conceptions that are useful for us. Indeed this is even necessary for us when we begin to use these instruments that constitute logic. We take them as scales to weigh the theoretical and practical sciences.

[T4] Avicenna, *Shifāʾ, Manṭiq, Burhān*, 67.13–16 [trans. Strobino, mod.]

[***principles of deductions***]

Hence the principles of syllogisms are imaginary (*mukhayyilāt*), based on sense perception (*maḥsūsāt*), based on experience (*mujarrabāt*), based on reliable tradition (*mutawātirāt*), primary (*awwaliyyāt*), deduced by the natural operation [of the intellect] (*fiṭriyyat al-qiyāsāt*), estimative (*wahmiyyāt*), commonly

accepted without qualification (*mashhūrāt muṭlaqa*), commonly accepted in a limited fashion (*mashhūrāt maḥdūda*), conceded (*musallamāt*), accepted (*maqbūlāt*), specious (*mushabbihāt*), at first sight commonly accepted yet unexamined (*mashhūrāt fī bādiʾ al-raʾy al-ghayr al-mutaʿaqqab*), and opinions (*maẓnūnāt*). These are fourteen types.

[T5] Avicenna, *Ishārāt Manṭiq*, 166.12–167.16 [trans. Inati, mod.]

[*demonstrative syllogisms are not the only valid arguments; they are distinguished by having necessary and essential premises*]

Just as objects of inquiry in the sciences may result from the necessity of a judgment, from the possibility of a judgment, or from non-necessary, unqualified existence (as with understanding based on the states of the conjunctions and oppositions of the stars), so each type [of these inquiries] has premises proper to it, which yield it as a conclusion. Similarly, the one who demonstrates infers the necessary from the necessary, or the non-necessary from [167] the non-necessary, be that mixed or pure. So pay no heed to anyone who says that the one who demonstrates employs only necessary propositions or possible ones that hold for the most part, and no others. Rather, if he wishes to conclude the truth of something possible that holds less often, he uses something possible that holds less often. And in every domain (*bāb*) appropriate [premises] are used. It is just this that was stated by the more accomplished earlier scholars, in a way overlooked by recent ones. That is, [the earlier scholars] said that in demonstration one concludes to the necessary object of inquiry from necessary propositions, while in non-demonstrative [inferences] one may reach the conclusion from non-necessary propositions. Either that's all they meant by it, or what they meant is that truth necessarily holds of the premises with respect to their necessity, possibility, or absoluteness. When the word "necessary" appears in the book *On Demonstration*, its meaning embraces the "necessary" mentioned in the book *On the Syllogism* and that whose necessity endures for as long as the subject is described by its attribute; but not the purely necessary. In the premises of demonstrations, essential predicates are used, and in the first two of the ways explained for the "essential" in premises. But when it comes to objects of inquiry [in the sciences], one never seeks essentials that are constitutive. You have already learned this, and learned why someone who disagrees would be wrong. Rather, [in science] one seeks only essentials in the other sense [sc. essential accidents].

[T6] Bahmanyār, *Taḥṣīl*, 192.3–8

[***contents of the Book* on Demonstration**]

The aim of this book is to teach that everything unknown is attained only on the basis of previous knowledge, regardless whether what is unknown falls under conception or assent. You will learn the classes (*aqsām*) of the principles of the sciences, their premises, and the properties (*aḥkām*) of the subjects and predicates in the premises. And you will learn the subjects of the sciences and their questions (*masā'il*), the subjects and predicates in the questions, the classes of the objects of inquiry [in the sciences], the classes of demonstration, the properties of each class, and the concomitants of both classes of demonstration [namely, why- and that-demonstration], and how to acquire definitions and hunt down first principles.

[T7] Bahmanyār, *Taḥṣīl*, 203.17–206.3

[***objections to infinity and circularity in demonstration***]

One might think that the principles go to infinity or in a circle, that is, such that the first is explained [204] by the second and the second by the first, like the explanations described in books when commented upon. *But we say*: the truth is that the premises ultimately end at first principles. For everything is either unknown or known, either by itself or by demonstration. But not everything is unknown, nor is everything known by demonstration. If everything [that is known] were known by demonstration, then every demonstration would be known by another demonstration. But how could there be a demonstration for everything? You know already that a demonstration is a syllogism, and a syllogism finds a middle between (*yakūnu wāsiṭa*) two terms. But the mediation cannot be infinite. For if there were an infinity of mediating [terms] between J and B, then absurdities would follow. One of which is that, between every two middles there would be a number of further middles between the two extremes, such that they would be infinite. But given the existence of some order [among them], some limited [subset of the terms] would be the same as all together, which is absurd. Another is that if the mediating [terms] go to infinity, then each one has neighboring [term] on both sides, which obviously could lack any mediation to it. But then some premises have no mediation with regard to [this premise] which is in the middle between them. And those are, inevitably, the principles of demonstration. And it has been said that every item of knowledge is only demonstrated by middle [terms] (*bi-wasaṭ*). So some of the principles of demonstration are not known, because they are not caused

by a middle [term]. Furthermore, how are we to know this claim [to be true], given that [205] for this very claim there must be an infinity of middle terms?

As for the falsehood of circularity: you know that if the premises could all go in a circle, then they would proceed from the first object of inquiry [i.e. assume what is meant to be proven], and then that thing would be known through itself.

[***how demonstrative premises are necessary***]

The premises of a demonstration must be necessary. Here "necessary" means something whose predicate always applies to its subject, not as long as it exists, but as long as it is described by it. For example: "Every white thing necessarily possesses a color that dilates vision, not as long as its essence is existent, but as long as it is white." Many of the figures in Euclid's book [sc. the *Elements*] are not "existent," but still it is possible to prove them by demonstration.

What is said about the premises of demonstration [here] is different from what we said in the book *On the Syllogism*. Instead, each thing that is described by the subject-term, at each time it is described by it (not at all times, without qualification), either has the predicate as an attribute, or has the predicate denied of it. For example: "Every B, as long as it is B, and at all times at which it is described as B, is A." This is because the premises here must be necessary. In general, "necessity" is undermined by one of two things. First, that there be [206] [at least] one thing [falling under] the subject [term] to which the judgment does not apply; or [second], that what is described by the subject-term includes something that at some time lacks the predicate. The modality of necessity may not be spelled out in scientific premises, as it is clear both to the mind and by custom.

[T8] Al-Sāwī, *Baṣā'ir*, 231.3–232.11

[***introduction to the art of demonstration: types of inquiry***]

The introduction is about determining the number of objects of inquiry in the sciences, after having explained that knowledge is either conception or assent. So the one who is inquiring (*al-ṭālib*) either turns towards the acquisition of conception, or the acquisition of assent. For inquiry into conception, there are patterns (*ṣiyagh*) that indicate them, and likewise for inquiry into assent.

Among the patterns for inquiry into conception, one pattern is called "what is the thing sought?" It is of two types. First, when one inquires into the meaning

of a name, for example: "what is void?" or "what is a phoenix?" Second, when one inquires into the true reality of the essence (*ḥaqīqat al-dhāt*), for example: "what is spirit (*rūḥ*)?," "what is intellect?," or "what is an angel?" Then there are other patterns, like inquiring into the conception of a thing as to how it is distinguished, either by its essential [concomitants] or by its accidents, from what shares with it in one of these two.

Concerning the pattern seeking assents, there is one that asks "whether?" Thereby, an assent is sought to one of two sides of a contradictory pair, that is, the affirmation or the negation. It is of two types. First, the simple [question], which inquires as to whether a thing is existent without qualification, or not. For example: "is void existent?" or "Are the *jinn* existent?" The other is composite. It inquires whether something is existent in a given state or under a given description, or instead is not existent in this way. For example: "Is God the creator of both good and evil?" In other words, "Is God existent with this attribute?"

Then there is the [pattern for questions] seeking [assent] with "why?" This is in order to know a cause for an answer [given to the question] "whether?," either with regard to a statement that seeks the middle term leading to belief in the statement and assent to it, or with regard to the matter in itself (*al-amr fī nafsihi*), in which case it seeks a cause for the existence of the thing in itself; and this may be with respect to its existence without qualification, or its existing in a certain state.

Now, there are other things into which one may inquire, like "how?," "how much?," "where?," and "when?" But the inquiry into the composite question "whether?" potentially applies to all [of these] and can be used in their place; and one may suppose that the inquiry "which?" too includes them. Therefore the inquiries "whether?" [232] and "why?" seek to elicit an assent, while "what?" and "which?" seek to elicit a conception.

The inquiry "what?," insofar as it concerns the [meaning of a] name, is prior to all inquiries. For if someone does not understand what a name signifies, it is impossible for him to ask about its existence or non-existence, or to seek knowledge of its true nature in itself. But the inquiry "whether?" taken without qualification is prior to the inquiry "what?" [when the latter] inquires into the true nature of the essence. After all, what has no existence also has no a true nature in its essence. Rather, a true nature is [always] a true nature of something that exists. As long as you don't know it exists, you cannot seek its

true nature. But sometimes the thing is existent in itself, and one can then ask about the meaning of the name that signifies it. Then the answer is a nominal definition (*ḥadd al-ism*) in relation to someone who does not know whether the thing exists, but once he knows that it does, that very same answer becomes an essential definition (*ḥadd bi-ḥasab al-dhāt*). This could lead one to suppose that the inquiry "what is its true nature?" is prior to the absolute inquiry "whether?," since the answer to [the former] is a true definition, even if one does not learn about its existence afterwards. But the truth is that the nominal definition is [a definition] in relation to the [inquirer] whereas the true definition is [a definition] in relation to the thing itself. If one knows that this thing understood as the meaning of the name is existent, then the statement that signifies the meaning of the name turns into a true definition for [the inquirer].

[T9] Al-Sāwī, *Baṣā'ir*, 233.3–234.9

[***on the nature, types, and parts of demonstration***]

A demonstration is a syllogism composed of certainly true premises (*yaqīniyyāt*) that produce a certainly true conclusion. You have already learned what certainly true premises are. Inductions covering all particulars exhaustively also fall under this definition, because they are included in syllogisms in general, given that they are divided syllogisms.

Demonstrations fall into that-demonstrations and why-demonstrations. A that-demonstration is a syllogism whose middle term is the cause for belief in the argument and assent to it, and nothing further. A why-demonstration is a syllogism whose middle term is the cause for the existence of the judgment in actual fact. That is, it is the interrelation of parts of the conclusion, namely the fact that the major term holds of the minor term.[7] Inevitably, this cause leads to belief in the argument and also assent to it. It gives the cause without qualification, because it gives the cause for assenting to the judgment and the cause for the holding of the judgment in itself. In general, both demonstrations give the reason why, but the why-demonstration gives it in the assent to the judgement. The cause of the judgment's holding is in the mind only and is specified by the name "that[-demonstration]."

7 Literally, "the existence of the major term in the minor term."

Now, if the middle term in that-demonstrations—even if it is not a cause for the major term's holding of the minor term—is an effect of [the major term's] holding of [the minor term], but [the middle term] is better known for us than the major term, then it is called a "proof (*dalīl*)." It may be that the middle term is neither a cause for the major term's holding of the minor term, nor its effect, but something additional to it or equal to it in relation to another cause, that is, if both are effects of a single cause.

As for the case where the middle term is a cause for the major term's holding of the minor term, and not only in the mind but also in actual fact, here it will be either (a) a cause for the major term without qualification; and if it is a cause for it without qualification, then it is a cause for it insofar as it holds true, so inevitably it is a cause for its holding of the minor term. Or (b) it is not a cause for it without qualification, but only a cause for its (b1) holding of the minor term, if the minor term is coextensive with the middle term, or (b2) holding of something with which it shares in falling under the middle term, if it is more specific than it. An example where the middle term is the cause for the major term without qualification would be: "This log has touched fire; everything that touches fire burns; therefore, this log burns." Here burning is the effect of touching fire without qualification and across the board (*ḥaythu kāna*), so [it holds] of the minor term too, this being its effect. An example of something where its cause holds just of the minor term, and of whatever shares with it [in falling under the middle term], but not without qualification, is: "Human is an animal; every animal is a body; therefore, human is a body." Here animality is not a cause for corporeality without qualification, but it is the cause for the fact that [234] human is a body. Corporeality applies to human through the intermediary of [human's] being animal. But it applies primarily to animal, and only through it as an intermediary to human. An example of a that-demonstration where the middle and the major term are two effects of a single cause is: "This patient who has suffered from weak and pale urination is in an acute phase of illness; everyone who suffers this runs the risk of pleurisy; from which one may conclude that this patient runs the risk of getting pleurisy." Pale urine and pleurisy are both effects of a single cause, which is an acute motion of the humors toward the head and rushing in that direction. Neither is by itself the cause or the effect of the other. An example of proof is: "This feverish person is afflicted by tertian fever; everyone afflicted by tertian fever has a fever of a putrid bile." The middle term, tertian fever, is the effect of the major term, namely putrid bile. Likewise for: "This log is burning, and everything that burns has been touched by fire." Burning, which is the middle term here, is the effect of the major term, which is touching fire.

[T10] Al-Suhrawardī, *Manṭiq al-Talwīḥāt*, 74.5–75.5

[*the thing sought and why- and that-demonstration*]

The important objects of inquiry [in the sciences] include: "is this thing existent?" which is called the simple "whether" [question]; and "is it in such-and-such state?" which comes after the existence-question and it is called the composite "whether" [question]. Then there is the inquiry "what is the thing?" which inquires into the quiddity of the thing and its true nature, once its existence is known. For what is said about [a thing] is a true nature once [the thing is known to] exist, but before that it is called a [mere] concept (*mafhūm*), and it is not yet said to be a true nature. By this we mean that when we say "true nature" then you may understand this as a substitute for "existence."[8] One may also inquire, "what is the concept understood (*mafhūm*) by this name?" And in the case [where the thing] exists, the concept becomes either a definition or delineation. The [question] "what is it?" as an inquiry into the concept understood by a name comes before the simple "whether" [question], whereas the one inquiring into the true nature comes after it. There is also the inquiry "which?" It inquires into the distinction of one thing from others. And there is the inquiry "why?" It inquires into the cause for the relation between the two terms in a conclusion, in actual fact (*fī nafs al-amr*), or the cause of assent, namely the middle term. [This inquiry "why?"] comes in order after "whether?" [questions]. Lastly, there are other inquiries like "how?" "where?" and "when?," but you don't need them. Among the four important ones, two have to do with conception [i.e. "what?" and "which?"] and the other two have to do with assent [i.e. "whether?" and "why?"]. [...]

[75.2] *You should know*: a demonstration is a syllogism composed of certainly true premises. The middle term in a demonstration is the cause for the connection of the two terms in the conclusion. This may be in concrete reality and in the mind, and then it gives the reason why, both in actual fact and for assent: this is called a "why" demonstration. Or, [the middle term] may be the cause for the connection in the mind only. That is, it gives the reason "why" for the assent, and the basis of the judgment, but without [giving] the reason "why" in actual fact. This is called the "that" demonstration.

8 Reading *badal* instead of *bidūn* with two MSS.

[T11] Abū al-Barakāt, *Muʿtabar*, 215.14–21

[***cites Aristotle for the inadequacy of habitual observation***]

Aristotle said that there is no power in habit (*quwwa al-ʿāda*) to observe things in such a way that the observation would be equivalent to the observation of what is certain. Whoever measures his assent by these mental scales must attain his goal by removing habit, just as he removes from the proposition whatever is connected to it and isolates it in his mind, stripped of all observations of it and about it, if he wants to consider it as primary. But if he wants to consider observations of it, these are the middle terms. We have already talked about this way of considering them, and the premises that are made the principles of syllogistic inquiry in every discipline (*fann*). Whoever is capable of this consideration by the power of the mind and its sound disposition for scientific inquiries, should [also] be able to consider the judgments of sensation and experience, by stripping them of whatever would lead to error; he inquires into the shared causes with regard to their particulars and the necessary judgment with regard to their universals.

[T12] Abū al-Barakāt, *Muʿtabar*, 217.11–14

[***the mental and extra-mental level in demonstration***]

In general, if we describe human as "body" before describing it as "animal," we are incorrect. For if the thing described is not a human when it is not an animal, then it is impossible for the major term to connect to the minor term before the middle term [is established]. In examples like these the error occurs simply because of a failure to distinguish between mental judgments and the way things are in [concrete] existence.

[T13] Al-Rāzī, *Manṭiq al-Mulakhkhaṣ*, 343.2–344.1

[***regress challenge to the certainty requirement***]

The logicians have dwelt on this topic [sc. demonstration] at length. *What we say is*: you have learned from the foregoing how the composition needs to be in order for a correct conclusion to arise. *We say then*: if these compositions consist of premises that are certain, and the syllogism is composed of premises that are certain in a way that is known to be valid, then the conclusion follows (*lāzima*) from them. But we have another kind of knowledge [called] "self-evident (*badīhī*)," which is such that what follows from it is free from doubt and certain. So in this case, certainty arises [as well].

In this latter sense, we must deal with a question that has been raised: if the following of conclusions from premises is necessary, then they must be grasped jointly by the intellect (*ishtirāk al-ʿuqalāʾ*).[9] Otherwise, another inquiry would be required, and an infinite regress would ensue. *We say*: the following is necessary; that from which [the conclusion] follows is necessary as a principle, or the necessity of the following derives from [a further] necessity, either via a single intermediary or several, to [345] each of which this [same reasoning] applies.

[T14] Al-Rāzī, *Manṭiq al-Mulakhkhaṣ*, 344.2–347.5

[***only primary premises can be taken for use in demonstration***]

Let us now investigate the premises which are the most primary for [any] assent. [Scholars] are agreed that the principles of demonstration are either primary (*awwaliyyāt*), observations (*mushāhadāt*), widely transmitted testimonies (*mutawātirāt*), experiences (*mujarrabāt*), or intuitions (*ḥadsiyyāt*).

As for intuitions: they mentioned as an example our belief that the light of the moon comes from the sun, because we observe the difference of [the moon's] shape depending on whether it is near to or far from the sun. *We say*: to know that the shape of the moon alters according to its distance from the sun requires [knowing] that its light comes from the sun, and [this knowledge] is either primary or not. If it is primary, then this is an item of knowledge that is self-evident (*badīhī*), for it is impossible to divide this into one part that is, and another part that is not, primary. (In the section on philosophy (*ḥikma*), we have explained how this premise is unconvincing.) But if it is not primary, then doubtless it is not something perceived by the senses (*maḥsūs*). For what is so perceived has a variety of forms (*ashkāl*). Nor is its being due to proximity or distance from the sun something perceived with the senses. Here we do need a demonstration, because on this reckoning no firm judgment (*jazm*) arises. This being so, they cannot be counted among [345] the principles [of demonstration].

As for experiences: their effects depend on co-presence and co-absence (*al-ṭard wa-l-ʿaks*),[10] like our noticing (*raʾy*) that the occurrence of diarrhea coincides with taking scammony, on one occasion after another. But this does not amount

9 For a similar argument see [T22] in our chapter on the Syllogism.

10 On this terminology see e.g. S. Rahman and W.E. Young, "In Existence and in Nonexistence: Types, Tokens, and the Analysis of *Dawarān* as a Test for Causation," *Methodos* 22 (2022).

to a firm judgment. For one thing, this would depend on observing the occurrence of that effect upon taking this specific medication, and we will explain later that sensation does not yield any universal and certain proposition. And even if we conceded that it does produce a universal proposition, scholars are agreed in arguing that co-presence and co-absence provide no certainty. How then do they now make it a *certain* premise? For on this reckoning [the observation of correlation] provides certainty, but that is not known by necessity, rather it surely needs proof. So it cannot be one of the absolute principles [of demonstration]. Also, because for a judgment to hold so long as some given thing occurs, or for [the judgment] to be denied when [the thing] fails to occur, does not necessarily mean it is *caused* by it, unless all other factors are ruled out (*illā ʿinda ibṭāl al-umūr*), including the voluntary Agent. In light of which, it would not be far-fetched to say that the voluntary Agent follows His habit in creating this effect for this specific thing, but without its being an effect of [that thing].

As for widely transmitted testimonies: doubts arise about their leading to [certain] knowledge. On the assumption that we concede this (*bi-taqdīr al-taslīm*), the most correct position is that they yield knowledge based on theoretical reasoning (*naẓariyya*) [as opposed to being self-evident], according to what we explained on two occasions in [our discussion of] the principles of jurisprudence. In which case they cannot be counted among the principles [of demonstration]. [346] But even if we conceded that these items of knowledge are necessary, still they would not lead to [certain] knowledge if they were not based ultimately on sense-perception. Even if people all over the world agreed in testifying to the existence of the Creator, may He be exalted, still no knowledge would arise thereby. And knowledge of the existence of Mecca, or of Muḥammad (God's blessing be upon him), only obtains because the reports about these things are ultimately based on sense-perception. This being so, testimonies are not a first principle.

As for observations: here there are two problems. *First*: sense-perception is subject to frequent error. Eyesight may perceive the unmoving as moving and vice-versa, what is one as two and vice-versa, and the small as big and vice-versa, as is thoroughly studied in books on optics (*kutub al-manāẓir*). What discriminates the true from the false in these [sense-perceptions], if not the intellectual faculty? Since then sense-perceptions are not first principles, but depend on the intellect and cannot do without the intellect discriminating [true from false] in them, there can be no firm trust in them. *Second*: sense-perception only provides [such things as] "this fire is hot when touched," and "this sun

is shining at this time." But when it comes to "*every* fire is hot," "*every* sun shines," and "*every* body is in a location," these are things that are not derived by sense-perception. For even if we suppose that we had sense-perceptions of all particulars that exist in the past, present, and future—although [347] this is impossible—even this would still not yield a universal proposition. Yet syllogisms need a universal proposition.

So it has become clear that the highest principle for supplying universal, certain propositions is the intellectual faculty, that the most prior among the propositions are the primary ones, and that those we have just enumerated derive from them.

[T15] Al-Rāzī, *Manṭiq al-Mulakhkhaṣ*, 347.6–349.10

[***arguments that estimative and widely accepted premises are weaker than primary ones***]

Now there are several problems here. For one thing, the philosophers (*al-ḥukama'*) claim that many estimative (*wahmiyyāt*) and widely accepted (*mashhūrāt*) [propositions] are equivalent to primary [propositions].

As for the estimative [*propositions*]: they may be false. And their falsity becomes known only through estimation and intellect arriving at assent to [other] things, from which there follows [a further] assent to the falsity of these estimative [propositions]. It is when the estimation acknowledges something that implies the contradictory of what it has judged that it knows the falsity of [the latter].

As for the widely accepted [*propositions*]: they are distinguished from primary [propositions] only when we suppose ourselves to be stripped of all theoretical and practical considerations. So it is as if we are created at a single stroke, without ever having seen anyone or done anything. Then, we present ourselves with a proposition, and if we find that even in this [348] state, we have a firm judgment in favor of [the proposition], then we know that it is primary. But if we would hesitate in this state, then we know that the proposition is [merely] widely accepted. [...]

[***replies***]

[348.7] What they mentioned concerning the difference between primary and estimative propositions is unconvincing. For this would be of avail only if

our knowledge of the correctness of the primary [propositions] were due to their being insured (*salāma*) against the intellect acknowledging anything that would undermine them. This, however, is false. For we will know this only if we know that there is nothing among propositions grasped by the intellect (*ʿaqliyya*) that undermines them. And this would be achieved only after going through all the propositions, which are infinite when taken one by one (*ʿalā l-tafṣīl*). But this is impracticable. Given that we do not know all propositions, we [should] allow for the possibility that, among them, there be some which undermine those premises which are thought to be primary; and given this possibility, no assurance (*wuthūq*) remains. Also, because if the premises that falsify the estimative propositions are [other] estimative propositions equivalent to them in [epistemic] force, and each would undermine the other, then it isn't [349] more appropriate that one undermines the other, instead of the other way around. If the estimative propositions were weaker than the primary, then we would have no need to distinguish the primary from the estimative propositions [as the distinction would already be apparent].

As for what they mentioned concerning the difference between widely accepted and primary [propositions], this is unconvincing. For we may suppose ourselves to be free from all theoretical and practical considerations, but in the absence of this supposition, that never happens. Since they allow for some propositions to become primary because of the familiarity and habit that make them such, this difference never arises, except when our soul is free from familiarity and habit. But this supposed freedom is something that never occurs in the soul at all; after all, not everything one may suppose actually happens.

So on the basis of what has just been shown, it has been established that one cannot claim that anything apart from primary [propositions] is equivalent to them in [epistemic] force and trustworthiness. Rather, everything enumerated above is such that the soul is inevitably uncertain about it in some respect.

[T16] Al-Rāzī, *Manṭiq al-Mulakhkhaṣ*, 349.11–354.7

[***series of arguments against the foundationalist theory of demonstration***]

After this, there remain some further problems.

[***we have subjective certainty about uncertain things***]

First: we find the intellect judging many things with just as much firmness as it judges the primary [propositions], even though firm judgment is not allowed

for [these things]. This being so, faith in the intellect's judgment is impugned. *Proof*: when we see Zayd, and he then disappears from view, and then we see him again, then we know that he is the same person we saw before, and this with the same force and reliability with which we know [350] that one is half of two. Yet this firm judgment is incorrect, for it is not impossible that God, may He be exalted, create a person who is like Zayd in all respects. The same argument goes for all things that return [to our sense perception]. If I leave my home, I have no way to know whether all the kitchenware in the house may not have transformed into gold and rubies, or even into people, like the most eminent of the verifiers in the exact sciences.[11] After all, such a possibility is upheld by reason, since we are talking about bodies, and any body can assume the attributes that other bodies assume.

Let it not be said: this possibility is absurd, and can be shown to be so by arguments that are certain. *For we say*: we do not concede that any argument can be set up to show its falsity. On the accepted account, the problem cannot be fended off. For if this firm judgment were to arise thanks to these demonstrations, then this firm judgment would have to arise only for someone who is acquainted with all the demonstrations. But this is not so. Even those who have no clue about the demonstrations still reach firm judgments concerning these propositions; thus, we know that this firm judgment is not derived [only] from the demonstrations. And if it is true that this firm judgment is not a necessary one, even though it is held just as firmly as the judgment concerning the other primary [propositions], then the fact that firm judgment arises for them does not imply that they are necessary in themselves. In light of which the criticism does apply to the primary [propositions].

[***regress argument concerning inferences***]

[351] *Second*: if there were premises that are primary, then either it is possible to compound them in such a way that a conclusion follows from them, or it is not. If it is possible, then if knowledge of this [sc. that a conclusion follows] is itself a matter of inquiry (*naẓarī*), it must go back to necessary [items of knowledge]. But then the same argument can be made, that knowledge of their correct composition is either necessary, or a matter of inquiry, so we are back at the same point just mentioned. If [knowledge of the inference] is necessary, then in that case knowledge of the premises would be necessary, and [knowledge of] their correct composition would be necessary too, as would be [the knowledge] that

11 Compare the skeptical hypothesis considered by al-Ghazālī at *Tahāfut*, 170 ed. Marmura.

the inquiry may make valid inferences from these items of knowledge composed in this way. So it would follow that items of knowledge reached through inquiry are items of necessary knowledge, which is absurd, because something would lead to what is just like it [i.e., an item of knowledge cannot be both inferential and necessary, in the sense of primitive].

[***premises used in physics and theology lack the highest degree of certainty***]

Third: let it be granted that we can help ourselves to the knowledge that "one is half of two," and whatever else has the same status of necessary knowledge that admits no possibility [of dispute]. You, however, do not use such premises in your philosophical investigations and in your learned works (*maʿālim*) of physics and theology. Rather you use different premises, like when you say "what is equally possible has no preponderance to either side, except by means of a preponderator," or "what applies to a thing applies to what is like it." Your argument rests on these and similar premises, and you claim that they are necessary and subject to firm judgment. But it is obvious (*maʿlūm*) that such propositions do not have the same force as "one is half of two" and what has this status. So if we present to the intellect the two types [of premise], then the firm judgment made in favor of one is not like that in favor of the other.

And such disparity is not allowed in the certain sciences, for if there is any [352] possibility [of dispute], be it ever so remote, there is no certainty. In other words, there can be no disparity at all [in the epistemic strength of the premises]. So we know that the premises used in these sciences are not in fact certain. This is why some of the later scholars transmitted from Aristotle the remark, "it is impossible to make firm judgments about theological matters. The furthest one can get is to engender belief in the most plausible and adequate way [possible]."

[***demand for second-order certainty; regress problem***]

Fourth: the general run (*jumhūr*) of the logicians consider certainty to involve a second belief (*iʿtiqād*), alongside a belief that corresponds [with the facts] and is firmly held. This second belief is the belief that it is impossible for the matter to stand otherwise than is believed. Demonstration too requires that this [second-order] belief concerning [the first-order] belief be held with certainty. Otherwise, the belief of someone who engages in uncritical acceptance (*iʿtiqād al-muqallid*) would have to [be counted] as knowledge (*ʿilm*). *Having established this, we say*: if this second belief is to be certain, there must be a third belief attached to it, namely that the matter stands exactly as the second belief attached [to the first] has it. And the same argument applies here as it did in the first case, yielding a regress. If on the other hand [the second belief] is

not certain, [353] then the first belief would become certain only [on the condition] that [the second belief] does hold. But whatever rests on something uncertain has even less claim to be certain. So it would have to be the case that certainty never arises for any belief, which undermines the primary [propositions].

[***problem of philosophical dispute***]

Fifth: your books contain much wavering on many questions, because of opposing proofs. This undermines the [very idea] of necessary items of knowledge, because these strongly opposing proofs are inevitably composed of premises, and each one of these premises is firmly judged by the intellect to be incapable of being undermined, and exempt from any possible criticism. Yet we know necessarily that some of them must be false, since contradictory premises cannot be true [together]. In light of which, we find that something our intellect firmly judged, with certainty and without any hesitation or possibility [of dispute], nevertheless turns out to be false. This being so, confidence in the intellect's firm judgment is eliminated, which again leads to undermining the primary [propositions]. If the intellect were able to undermine some of these premises [and leave only others standing, to eliminate the dispute], there could be no wavering. Indeed, one would need to show that among the premises, one of the two sides [of the contradiction] can be [disputed], as that which is open [to dispute] produces no certainty. And in that case there would be no need for wavering.

[***concluding remarks***]

These then are all the problems raised by sophists who deny necessarily [known propositions]. [354] *You should know*: for firm judgment of the correctness of self-evident [propositions], we need an answer to these difficulties. But doubtless, the answer to [the problems] would be a matter of inquiry, not a matter of necessary [knowledge] (*naẓarī ghayr ḍarūrī*). But in that case, firm judgment as to the correctness of necessary [propositions] would depend on inquiry; and the inquiry would be composed from necessary premises, yielding a circle. If on the other hand we do not need any answer to these difficulties to have firm judgment of [the self-evident, primary propositions], then there is no pressure on us to answer them at all. It would be, as it were, something surplus to requirements. We have talked in great detail about the answers to these problems in [our] book *al-Nihāya*, so whoever wants to, should read that book. But for now, this is the end of our discussion of the science of demonstration.

[T17] Al-Abharī, *Īsāghūjī*, 29.2–31.8

[***types of proposition in demonstrations***]

A demonstration is a syllogism composed of premises that are certain, which in turn produce conclusions that are certain. These certain propositions are of [six] types. *Primary*, like "one is half of two," "the whole is greater than the part." *Observational*, like "the sun is risen," "fire burns." *Experiential*, like "scammony is laxative for the bile." *Intuitive*, like "the light of the moon is borrowed from the light of the sun." *Transmitted by testimony*, like "Muḥammad, peace be upon him, claimed to be a prophet, and miracles manifested themselves at his hands." Finally, *implicitly syllogistic propositions*, like "four is even, because a middle term is present in the mind, namely division into equal parts."

[***other kinds of syllogisms***]

The dialectical syllogism is one composed from widely accepted premises that are not challenged by laymen or by the disputants, like "justice is good and injustice bad." *The rhetorical syllogism* is one composed from premises that are accepted from someone in whom one has confidence or trust. *The poetic syllogism* is one composed from premises received from imagination, which please or displease the soul. *The sophistic syllogism* is one composed from premises that are false yet pretend to be true or widely accepted; or else of false estimative premises. But demonstration is the pillar, nothing else.

[T18] Al-Ṭūsī, *Taʿdīl*, 226.4–227.4

[***critique of al-Abharī's definition of certainty: need for subjective and objective constraints***]

[*Al-Abharī*] *said*: certainty (*yaqīn*) is the conviction (*iʿtiqād*) that something is such-and-such and that it is impossible for it to be otherwise. A belief (*ẓann*) is a judgment (*ḥukm*) about something, while being aware that the opposite is possible (*maʿa al-shuʿūr bi-imkān naqīḍihi*).

I say: if with this explanation of what certainty is, he means that it is a conviction that something is such-and-such, together with the *conviction* that it cannot be otherwise, then this would include cases of compound ignorance [i.e. being mistaken and not knowing that one is mistaken]. But if he means it is a conviction that something is such-and-such, while the thing cannot possibly be otherwise *in actual fact* (*fī nafs al-amr*), then this would

include the conviction of someone who firmly holds to something by uncritically following authority (*iʿtiqād al-muqallid al-jāzim*), so long as [the conviction] is in correspondence [with reality]. But if he intended both meanings together, then this would exclude both the conviction of the one who uncritically follows authority, and the one who suffers from compound ignorance. For neither of these would have certainty, or even [true] belief, because they lack awareness that the opposite is possible. Yet [al-Abharī] explains "belief" as a judgment about something, while being aware that the opposite is possible.

The correct answer is to explain certainty [by three criteria]: it is conviction that is firmly held *and* in correspondence to reality, and which cannot cease. By contrast, the conviction of one who uncritically follows authority, and gets things right, is a conviction that is firmly held and in correspondence [with reality], but it is possible that it cease. While the conviction of someone who suffers from compound ignorance is firmly held, but not in correspondence [with reality].

Belief is opposed to certainty, because it is a conviction which is not firmly held, or not in correspondence [with reality], or can cease. And belief in the pure sense comes with awareness that the opposite is possible, and involves a conviction that is not firmly held.

[*Al-Abharī*] *said*: in "beliefs" someone judges that one of the two sides of a contradictory [pair] holds, even as the mind is aware that the other side is possible. The reason for a belief is either its notareity (*shuhra*), and such beliefs are called "widely accepted" (*mashhūrāt*); or it is received from someone who is good at forming belief; these are called "received" (*maqbūlāt*).

[227] *I say*: widely accepted [beliefs] in the true sense, and received [beliefs], are not without qualification among the totality of beliefs in which someone judges one of two sides of a contradictory [pair] to hold, even as the mind is aware that the other side is possible. For predominantly these are held firmly [i.e. the believer would not acknowledge the possibility that they are wrong]. Still, they do fall among the totality of beliefs which are opposed to the certain ones; so how is this so? They simply vary insofar as some are held firmly, and some are not.

[T19] Al-Kātibī, *Shamsiyya*, 231.1–12 [trans. Steet, mod.]

[***types of certain propositions***]

There are six [propositions that have] certainty: *Primary*: these are propositions such that conceptualizing their two extreme terms is sufficient to have a firm judgment of the relation between the two, as in "the whole is greater than the part." *Observational*: these are propositions in which judgments are made by the external or internal faculties, like the judgment "the sun is risen," or that one is experiencing anger or fear. *Experiential*: these are propositions in which judgments are made due to repeated observations that yield certainty, like "drinking scammony leads to diarrhea." *Intuitive*: these are propositions in which judgments are made due to a powerful intuition of the soul that yields knowledge, like the judgment that the light of the moon is acquired from the sun. (Intuition is speed of transition from principles to what is sought.[12]) *Transmitted by testimony*: these are propositions in which judgments are made due to copious witnesses, after [having secured] knowledge that there is no impossibility involved. They command trust due to widespread agreement about them, as with the judgment that Mecca and Baghdad exist. There is no set number of witnesses; it is rather reaching certainty which decides that the number is complete. (But knowledge gleaned from experience, intuition, and transmitted testimony does not constitute a proof [that is compelling] for someone else.) *Implicitly syllogistic propositions*: namely those in which judgment is made by an intermediary that is never absent from the mind upon conceiving the terms, like the judgment that four is even, due to its divisibility into two equal parts.

[***why-demonstrations and that-demonstrations***]

A syllogism composed of propositions from among these six types is called a demonstration. It is either a demonstration of *why* something is the case, in which case the middle term is a cause for the relation [between the terms of the conclusion], both in the mind and in concrete reality, as in "this person has putrid humors; everyone with putrid humors is feverish; therefore this person is feverish." Or it is a demonstration *that* something is the case, in which the middle term is a cause for the relation in the mind alone, as in "this person is feverish; everyone who is feverish has putrid humors; therefore this person has putrid humors."

12 This definition of *ḥads*, "intuition," will be explored in a chapter on Intuition in the forthcoming volume on Physics and Psychology.

[T20] Al-Kātibī, *Shamsiyya*, 233.3–17 [trans. Steet, mod.]

[***the parts of the sciences***]

They include: *the subject-matters*, which you have learned about already. *The principles*, which are the definitions of the subjects, their parts, and their essential accidents. *Premises that are not evident in themselves*, which are adopted by way of being postulated, like "we can draw a straight line between any two points" and "we may produce a circle at any distance around any point we choose." *Premises that are evident in themselves*, like "quantities equal to the same quantity are equal to each other." *Questions*, which are propositions in which the relation of the predicates to their subjects is sought in the respective science.

The *subjects* (*mawḍūʿāt*) of the questions are either[13] (a) just the subject-matter (*mawḍūʿ*) of the science, as in "every magnitude is either commensurable or incommensurable with another magnitude." (b) Or they may be the subject-matter plus an essential accident, as in "every middle magnitude is a segment (*ḍilʿ*) contained by two extremes."[14] (c) Or they may be species of [the subject-matter], as in "every line may be bisected." (d) Or they may be species of [the subject-matter], plus an essential accident, as in "if one line is set upon another, the angles on either side are either two right angles, or sum to two right angles." (e) Or they may be an essential accident of [the subject-matter], as in "every triangle has angles which sum to two right angles." As for the *predicates* of the questions, these must be extrinsic to their subjects, because one cannot establish by demonstration that a part of something belongs to that thing, as an object of inquiry.

13 To explain the following examples: in (a) "magnitude" is both the subject-matter of the science in question (i.e., geometry) and the subject term in this proposition. In (b) the subject of the proposition is the subject-matter of the science, "magnitude," modified with the accidental predicate "middle." In (c) the subject of the proposition is a species of "magnitude," i.e. "line." In (d) we have the same thing, but the accident "set upon another line" is added. In (e) the subject of the proposition is "triangle" which is accidental to "magnitude."

14 This is a technical geometrical example. Take as "middle magnitude" 4 inches. 4 inches are said to be in the middle of two magnitudes, 2 inches and 8 inches, so that 4 inches are half of 8, and 2 inches half of 4. Now, the middle segment (4 inches) is contained by the extremes (4 and 8 inches, respectively) in that squaring it yields the same as multiplying the extremes ($4^2 = 2 \times 8 = 16$). We take the explanation from al-Taftazānī's commentary.

[T21] Al-Kātibī, *Munaṣṣaṣ*, fols. 171ᵛ10–172ᵛ14

[***on al-Rāzī's remarks on demonstration in T13***]

[*Al-Rāzī said*]: the logicians have dwelt on this topic [sc. demonstration] at length [...].

[172ʳ28] *I say*: the Imām [al-Rāzī] passes over the arguments on demonstration and its features that he associates with the domain of logic, and [simply] says that, so long as you can tell a correct composition [of a deduction] from an incorrect one, then once a correct composition is imposed upon premises that are certain, the syllogism will be composed of such premises. The syllogism composed from [certain] premises with a correct composition will by necessity yield what is sought as a conclusion, and you will have certain knowledge of it. This is because what follows from something that is as described must be certain. So in such a case you know that the sought conclusion is certain. But from whatever is not as described, either because the premises are false, or because the composition is faulty, you know that no conclusion follows. He does not go into the issue more deeply, but turns to answering a question he raised, namely: *it may be asked*: if the following of a conclusion from the premises is necessary (*ḍarūriyyan*), then they must be grasped jointly by the intellect (*wajaba ishtirāk al-ʿuqalāʾ fīhi*). [Otherwise] another inquiry would be required, and an infinite regress would ensue. But if it is said that the following is necessary, then we do not concede what he said, that they must be grasped jointly by the intellect. This would follow only if anyone grasping [the syllogism] would comprehend these premises without their proper composition; but this cannot be. [...]

[172ᵛ6] As for us, we shall mention some of the things that were said in *On Demonstration* so that the commentary, together with the base text (*aṣl*), [covers] all parts of this science. [Al-Rāzī] in this section (*bāb*) does not heed the structure of the *Book on Demonstration*, but rather the structure necessary [for the presentation of the subject matter]. For each passage, we will mention the questions raised by the Imām [sc. al-Rāzī].

[***syllogistic principles, and the nature of primary premises***]

We say then: the premises which are principles [of demonstration], be they certain or not, may not be derived from other premises, or they may be. But ultimately they must end in premises of a kind that needs no proof, on pain of circularity or regress, both of which are absurd. The premises of the kind that need no[15] proof are called "syllogistic principles." They are of thirteen different kinds.

15 Reading *mustaghniyya*.

First, those that are primary. These are propositions that the intellect judges [as true] in themselves; their nobility lies in the fact that no reasons outside of them is required to know them, nor any disposition or any other faculty of the soul. The intellect settles on these [immediately] upon conceptualizing their individual parts. As soon as these [parts] are conceptualized, the mind is quick to assent to [these propositions] without ever being heedless of them. For example, "The whole is greater than the part" and "Things equal to the same thing are equal to one another," and other [propositions] taken from observation of the senses, albeit that sense-perception does not grasp universals, but is limited to particulars.

[T22] Al-Kātibī, *Munaṣṣaṣ*, fols. 172^{v}14–173^{r}20

[***on al-Rāzī's first problem in T16: not all certain propositions are grasped with the same epistemic force***]

Imām [*al-Rāzī*] *said*: "After this, there remain some further problems. First, we find the intellect judging many things with just as much firmness as it judges the primary [propositions], even though firm judgment is not allowed for [these things] …" and so on.

I say: what this argument is driving at is that, if firm judgment of first principles were to occur without a conception of its parts that necessitates their [also] being certain, then it would be necessary that propositions judged firmly by the intellect are just like its judgment of the certain first principles. […]

[fol. 173^{r}4] *Response*: we do not concede that we actually know that the Zayd we are seeing is the same one we saw before, or that we know that all the kitchenware in the house does not, after we leave the house, transform into gold and ruby, or even into people like the most eminent of the verifiers in the exact sciences, with the same force and assurance with which we know that one is half of two. For we do not find them to be even potentially likely when we present all this to the intellect, and this indicates the disparity [between the two cases]. How could there be no disparity, assuming what you mentioned about both options being possible? We do concede this. Still, you do not say that the firm judgment is *incorrect*.

[***critique of the thought experiments about miracles***]

What he says about the correctness of the first firm judgment [sc. that Zayd is the same person] was that God, the exalted, could be said to create a person

who is like Zayd in all respects. *We say*: we do not concede this. For this possibility to occur, there would have to be two persons that share all their features. But this is absurd, because there can be no such doubling without something to differentiate [one member of the pair from the other]. *Let it not be said*: God could be said to destroy the Zayd who was seen first, and then create another person like him in all respects, and from this it would not follow that two persons who are the same in all respects exist at the same time. *For we say*: this too can be ruled out, because the creation of a person who is like Zayd was at that time also impossible, regardless whether He destroys the Zayd who was seen, or not. [...]

[173^{r}16] As for what he says about the absence of firm judgment in the second case, given that it is possible that the kitchenware in the house transforms from what they were at first, because of what is upheld by reason concerning the true realities, *we say*: we do not concede what he has said, namely that this is because they are bodies, and all bodies are such that they can take on any attributes that all other bodies can take on. *We say*: we do not concede the truth of the major premise [sc. that all bodies can take on all attributes]. This would follow only if the fact that every body can take on all attributes were due to its being a body. But this is not so. For some attributes might apply to some bodies because they are specific bodily attributes, or because of some factor that arises for some and not others, having to do with some difference,[16] or proper characteristic, or the [physical] mixture.

[T23] Al-Kātibī, *Munaṣṣaṣ*, fol. 173^{v}10–14

[*on al-Rāzī's second problem in T16: what is implied by necessarily grasped propositions is not itself grasped necessarily*]

Response: you have not shown that, if it is possible for the mentioned composition of the [premises to imply a conclusion], then knowledge of the correctness of these premises is necessary, as is [knowledge] of the correctness of their composition, as is an implication through inquiry from these composed items of knowledge; and in this way it would necessarily follow that the items of knowledge reached through inquiry are necessary. For this would follow only if what is implied by the necessary item of knowledge followed necessarily [from it]. But this is rejected, since the "necessary" is that which the intellect does not

16 Adopting the reading *faḍl*.

hesitate to judge firmly upon conceptualizing the two terms [of a proposition]; and the implication from the necessary [item of knowledge] is not like this.

[T24] Al-Kātibī, *Munaṣṣaṣ*, fol. 173^{v}21–28

[*on al-Rāzī's third problem in T16: we tolerate degrees of certainty*]

The meaning of this argument is clear enough. *Response*: we do not concede that [propositions such as] "what is equally possible has no preponderance to either side, except by means of a preponderator," or "what applies to a thing applies to what is like it" are not judged with the same [epistemological] force as "one is half of two," when we conceptualize their terms. For once we know that what is equally possible on either side relates equally to existence and non-existence, with respect to its essence (in other words, its essence does not require either of these), and that its being preponderated to one side over the other is for existence to occur for it, rather than non-existence, or vice-versa; and [we know] that what is preponderated is not something that can preponderate its own being over its own non-being; then the intellect makes a firm judgment that "what is equally possible has no preponderance to either side, except by means of a preponderator." The same argument goes for the other proposition and other, similar cases.

Yes, if there were a disparity [in epistemic force] then this could eliminate awareness of the parts. But so long as one is aware of them, then on the whole we concede that there may be a disparity [in epistemic force] even once conceptualization of the parts has arisen. But you have not shown that there can be no disparity [in the epistemic force of propositions] in the certain sciences. Primary premises and premises reached through inquiry are all certain[17] despite the disparity between them.

[T25] Al-Kātibī, *Munaṣṣaṣ*, fol. 174^{r}10–19

[*on al-Rāzī's fourth problem in T16: no regress of higher-order beliefs*]

This argument too is clear enough. *Response*: if in your argument you mean by "certain" that the second[-order] belief is either certain or not for the person making the firm judgment, then doubtless he is "certain" in this sense. But there

17 Adopting the reading *yaqīniyyāt*.

is no need for a third[-order] belief to attach to it, as the second[-order] belief attached to [the first-order belief]. Rather, this is only necessary for the first[-order] belief; otherwise an infinite regress would ensue. If on the other hand you meant [by "certain"] that which is expressed by another belief, namely the belief that things cannot be otherwise than is believed, then doubtless he is *not* certain in this sense. But it does not follow that whatever is built on something uncertain lacks certainty in this sense, because while he may be not certain in this sense he may still be "certain" in the sense that he makes a firm judgment. From the fact that he does not form the belief that things could not possibly be otherwise than he believes, it does not follow that he forms the belief that things may [in fact] be otherwise than he believes. A confirmation of this is that certainty is a quiddity composed from these two beliefs, neither of which needs to be certain in this [second] sense. Otherwise it would follow that the part[18] [sc. of certainty] is described with the true nature of the whole, which is absurd. Rather, each of the two [beliefs] is judged firmly, and what is "certain" is that to which both beliefs attach. For example, when we believe with certainty that the world is created, and that this could not be otherwise than what we believe, the [fact] that the world is created is certain because the two beliefs attach to it and are both judged firmly. So in fact each of the two beliefs is [only] a part of certainty, and is attached to what is certain. Perhaps it may be said that someone is "certain" [about these parts], but only in a metaphorical way.

[T26] Al-Kātibī, *Munaṣṣaṣ*, fols. 174^{r}26–174^{v}13

[***on al-Rāzī's fifth problem in T16: the supposed phenomenon of being certain about clashing proofs is denied***]

What he mentioned does not [lead to] hesitation between affirmation and denial. For the contrary of "the intellect firmly judges some of these premises, and is somehow able to rule out that they will be undermined," would be one of two things. Either the intellect does *not* firmly judge some of these premises; or it allows that some of them *may* be undermined. Now the second cannot happen with certain[19] [propositions], as he [sc. al-Rāzī] mentioned. In which case it might be the intellect is not firmly judging any of the premises in the two [clashing] proofs, or just some of [the premises]. In fact we know with cer-

18 Adopting the reading *juz'*.
19 Reading *al-yaqīn*.

tainty that one of the premises is false, but are unable to say which one, so that we cannot rule out that [any of the premises] may be undermined. But how could it be that we firmly judge and know with certainty that the proof, when its premises are true, leads to the belief that the conclusion is correct, so that if one were to believe in the correctness of the premises of both [clashing] proofs, there would follow the belief that contradictories are both correct, which is absurd?

[***concluding remark: no need to pose questions of second-order certainty***]

You should know: if we need to have firm judgment in the truth of certain [propositions] in order to respond to these problems [sc. all those presented in T16], then doubtless the response to them will be a matter of inquiry, not necessary [knowledge]. In which case, firm judgment as to the correctness of necessary [items of knowledge] would depend on inquiry. Yet [arguments] in inquiry are composed from necessary [items of knowledge], yielding a circle. If on the other hand we do *not* need firm judgment concerning them to respond to these problems, then [the problems] have no force against us. [...] [174^{v}12] *The truth* is the second option: we do not need firm judgment about the correctness of immediate [propositions] in order to respond to these [problems]. For the intellect simply judges the immediate propositions to be correct, without having to attend to these problems.

[T27] Al-Urmawī, *Maṭāliʿ*, 107.9–16

[***the conditions on demonstration***]

Premises are certain either [because they are] principles, or through an intermediary. When they are composed in a way known to be correct, the syllogism is demonstrative, otherwise not. Premises that are certain are those that are first principles for demonstration, like primary [propositions], what is perceived by the senses, taken from reliable traditions, from experiences, or from intuition. Each one of these five raises problems, but to mention them all would not be suitable for a summary. Furthermore, the middle term in a demonstration must convey the judgment that the major term is affirmed of the minor term. When it is the cause for the *existence* of the major in the minor term, the demonstration is called a "why-demonstration," because it gives the reason for the assent and for the judgment as to extramental existence. If it is not like that, it is called a "that-demonstration," because it leads to the facticity of the judgment in the extramental world, without saying why; it only conveys why there is assent.

[T28] Al-Samarqandī, *Qisṭās*, 487.1–489.3

[***the traditional conditions on demonstration are too restrictive***]

They said: the conditions for premises in a demonstration are that, besides being certain, they should be prior to the conclusion in the intellect, so that they are the cause for the assent. Furthermore, they should be appropriate (*munāsaba*), that is, their predicates should be essential for their primary subjects. And they should be necessary and universal.

By "essential" they mean here something more general than "part," which would include the essential accidents, namely those that attach to the quiddity of the subject, like laughter for human, and evenness to number. And they explained this as follows: "either it falls under the definition of the subject, or the subject falls under its definition." The first would be the case where it falls under the definition of the subject and the definition is a real one (*ḥaqīqiyyan*); so it is a constituent. The second is what falls under the definition of the subject in a way necessitated by considering the fact that it is specified for and connected to [the subject]. This is an essential accident. Some understand it in a more general way, saying that [the "essential"] is whatever falls under the subject's definition, or if its definition falls under the subject, its genus, or its accidents, or the accidents of its genus.

By "primary" they mean that which is a predicate without intermediary, like the proximate genus and specific difference, and the real essential accident of the species.

And by "universal" they mean that the predicate is said of the whole at all times, and with a necessity that is more general than essential, descriptive, and temporal [necessity].

But these conditions call for further inquiry. For "essential" in the first interpretation leaves out many true mixed-modal syllogisms that yield demonstration. But with ["essential"] in the second interpretation, there would be added no further condition for propositions used in demonstrative syllogisms; for no predicate of any proposition would be left out, with this interpretation. Likewise "primary", "universal", and "necessary" have been determined in a way that leaves out many true [propositions] that yield demonstration, like predication of the remote genus, the productivity of particular [premises], and merely contingent or existential [premises].

[498] Perhaps these conditions were only adopted by those who preceded the Master of Logic [sc. Avicenna?], before the theory of propositions was sketched out (*talkhīṣ*). But you know that knowledge of the modalities of propositions and the qualities of their mixes and productivity conditions require none of these arbitrary conditions on demonstrations.

[T29] Al-Ḥillī, *Marāṣid*, 353.10–355.8

[***definition and elements of demonstration, in terms of Aristotelian causes***]

A demonstration is a syllogism that is certain, composed of premises that are certain, either as principles or through an intermediary, which by itself and necessarily leads to a conclusion that is certain. The syllogism is its form, while the certainties (I mean the premises) are its matter. And the conclusion is its end [i.e. its final cause]. The certain premises are either necessary or acquired. You have already learned the different types of necessity [premises]. All of them, along with the certain premise that is acquired, are appropriate [for use in demonstration], because it [sc. an acquired premise] is made the premise of a demonstration, and so its principle. The utility [of a demonstration] lies in its end, the conclusion, for there is no more perfect utility [in syllogistic] than what leads to certainty. [354] Its utility is not exhausted by the fact that it leads to certain assent, but also in the acquisition of complete definitions, as you will learn later, God willing.

[***the place of demonstration among the syllogistic arts***]

Demonstration leads to certainty; dialectic leads to the practice of defending what is opposed to the truth; rhetoric leads to opinion (*ẓann*); sophistry leads to argument by way of fallacy; while poetry does not lead to any assent at all, but to an imagination that leads the soul to move towards contraction or relaxation. So the ordering of this art [sc. syllogistic] is parallel to the ranks of the results achieved. Now, some have given precedence to dialectics, but others have disagreed. The Master [sc. Avicenna] approved of putting dialectic first, since its principles are premises that are widely accepted (*mashhūra*) or inductive (*istiqrā'iyya*), whereas the principles of demonstration are certain,[20] and the more general is more appropriate [to deal with first]. For all sensory, experiential, and primary [propositions] are widely accepted, but not vice-versa. And the more general takes precedence.

20 Avicenna, *Shifā', Manṭiq, Burhān,* 55.3–5.

[*types of demonstration*]

A demonstration may be a why-demonstration, in which case the proof proceeds from the cause to the effect in the sense that the causal connection is made perspicuous both in actual fact and in the mind. Or it may be a that-demonstration, in which case the proof proceeds from the effect to the cause; or from one effect to another, but this goes back to the pair [sc. the initial cause in the chain and its effect]. The middle term in a why-demonstration is the cause of the major term, but this does not mean that it is the cause for it without qualification. Rather, it is the cause for the existence of the major term in the minor term, which is different. For the middle term may be an effect of the major term, but still be the cause for the existence of the major term in the minor term. Now, the middle term may be a cause for two things: the existence of the major term without qualification, or its existence in the minor term. And the cause of [the major term's] existence in [355] the minor term occurs only in two scenarios. *First*, where the major term would not exist if not for the minor term, like the eclipse that would not exist were it not for the moon; so its cause is the cause for its existing in the moon. *Second*, where the cause of the major term is [only] its cause whenever it exists [in the minor term]. In any other scenario the two causes are distinct [sc. the cause of the major term and the cause of the major term's existing in the minor].

[**reductio** ***syllogisms***]

The *reductio* syllogism is a that-demonstration, not a why-demonstration, because in this case the truth of the conclusion is established by the falsity of its contradictory, because it implies an absurdity. This is a proof by means of something extrinsic, not by its cause.

[T30] Al-Ḥillī, *Asrār*, 202.9–17

[***the causation of the middle term***]

Secret: the middle term in demonstrations is the cause for the conclusion's [arising] in the intellect; otherwise it would not be a demonstration. If it has a cause in extramental reality as well, then it is a why-demonstration; otherwise it is a that-demonstration. Now, if the effect of the existence of the predicate is in extramental [reality], then it is a proof (*dalīl*). And this is more truly called a "demonstration," for [a demonstration] is something to whose kinds modulation (*tashkīk*) applies [i.e. some kinds are more appropriately called a demonstration than others].

You should know: the middle term may be an effect of the existence of the major term without qualification, [while also being] the cause for the existence of the major term in the minor term. And this just in two ways: *first*, in the sense that the major term would not have existence if not for the minor term. Second, in the sense that the cause of the major term is [only] its cause whenever it exists [in the minor term].

CHAPTER 14

Definitions and Meno's Paradox

For critics of Aristotelian philosophy, an obvious potential weak point has always been the fact that its theory of demonstration depends on giving essential definitions. If we could show that it is usually, or entirely, impossible to grasp things in their essences then the whole edifice of Aristotelian science would seem to rest on shaky foundations. In the Christian tradition a diverse range of late ancient and medieval authors, including the Cappadocian Fathers and some fourteenth century scholastics, were persuaded that essences are inaccessible to humans and that we grasp substances only through their accidents; we find something similar still later, in John Locke. A parallel position was put forth by several figures in our period, notably Fakhr al-Dīn al-Rāzī and al-Suhrawardī. They argued for this apparently skeptical view by repurposing the tools of Avicenna's own epistemology: since we only ever grasp things from a certain limited perspective, which is a "conceptualization (*taṣawwur*)" or "meaning (*maʿnā*)," we are only ever in a position to give "nominal" definitions and not real or essential ones.

To understand their argument for this and how defenders of Avicennan epistemology responded to them, we need to go back even before Aristotle, to Plato. In a celebrated passage of his dialogue the *Meno* [T1], he has the title character present what is sometimes called the "paradox of inquiry." The problem is that you cannot inquire into what you already know, since you already know it, nor into what you don't know, because in your ignorance you have no basis for doing so. (Actually Meno says the problem is that you will not "recognize" the object of inquiry upon finding it, but we will be seeing treatments of the paradox that treat it as a problem of how to start, not how to recognize that one is finished.) This paradox is taken up by Aristotle in the *Posterior Analytics* and answered by appealing to the idea that our ignorance of the object of inquiry need not be total. We might have knowledge about some universal type but not a particular that falls under that type [T2], or a mere descriptive account of what we are looking for without true understanding [T3].

Meno's paradox was further discussed by Aristotelian philosophers of the formative era, including al-Fārābī and of immediate relevance to us, Avicenna.[1] Although some scholars claim that Avicenna doubted our capacity to under-

1 D. Black, "Al-Fārābī on Meno's Paradox," in P. Adamson (ed.). *In the Age of Al-Fārābī: Arabic*

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stand essences, referring to an ambiguous passage from Avicenna's *Taʿlīqāt* [T8] (for instance, al-Ṭūsī is clearly reluctant to understand Avicenna that way [T40]), it is pretty clear that Avicenna usually accepted our capacity to acquire real definitions of things [T6]. Against Meno's paradox, he developed Aristotle's idea of giving a preliminary mere description of the object of inquiry in terms of his contrast between "conceptualization" and "assent": I can conceptualize what a triangle is without assenting to every truth concerning it, even necessary truths that attach to its essence, for instance that its internal angles are equal to 180 degrees [T4]. For Avicenna, the paradox is a "sophistical argument" because it ignores the fact that we grasp things in different ways. He uses what for us today is a rather repugnant example: you might know an escaped slave incompletely but still be able to recognize him, say by some distinguishing mark. Just so, mere conceptualization can facilitate inquiry: we identify a corresponding subject of incomplete understanding in observable reality and then learn further things about it, ultimately reaching the level of complete understanding [T5]. The descriptive account in the beginning of the inquire is a merely "nominal" definition [T6]. It does not provide scientific understanding but it could provide the basis for starting an inquiry that terminates in such understanding. All this terminology became standard in post-Avicennan thought, as we can see for instance in a text from al-Sāwī [T9] (see also our Chapter "Conceptualization and Assent") or from a passage in Abū l-Barakāt in which he equally identifies knowledge as the *re*cognition of the previous conception [T13].

But Avicenna's account unwittingly opened the way to formulate a more sophisticated attack on definition staged by Fakhr al-Dīn al-Rāzī and al-Suhrawardī.[2] They argue that we can never get past a nominal definition or conceptualization so as to define a thing as it really is, which is called "coming to understand (*taʿrīf*)" the thing. In fact all we can ever do is explain what we mean by a term or how we "conceive" the thing picked out by the term, but this conception may well be incomplete or inadequate, is perhaps even guaranteed to be so. The

Philosophy in the Fourth/Tenth Century (London: 2008), 15–34; M. Marmura, "Avicenna on Meno's Paradox: On 'Apprehending' Unknown Things," *Mediaeval Studies* 71 (2009), 47–62.

2 On Fakhr al-Dīn see A. Falaturi, "Fakhr al-Din al-Razi's Critical Logic," in M. Minuvi (ed.), *Yādnāmah-yi Īrānī-yi Minorsky* (Tehran: 1969), 51–79, B. Ibrahim, "Faḫr al-Dīn al-Rāzī, Ibn al-Hayṭam and Aristotelian Science: Essentialism versus Phenomenalism in Post-Classical Islamic Thought," *Oriens* 41 (2013), 379–431; N. Jacobsen Ben Hammed, "Meno's Paradox and First Principles in Fakhr al-Dīn al-Rāzī," *Oriens* 48 (2020), 320–344; F. Benevich, "Meaning and Definition: Skepticism and Semantic Internalism in Twelfth Century Arabic Philosophy," *Theoria* 88:1 (2022), 72–108. On al-Suhrawardī, see Benevich op. cit. and J. Kaukua, *Suhrawardī's Illuminationism: A Philosophical Study* (Leiden: 2022), Chapter 1.

best we can do is work on sharpening our provisional descriptions or conceptions of things and testing them against the world as we experience it, without ever being confident that we have grasped things in their essences. That's the fundamental point, but there is much more detail to explore. Before we do so, it should be cautioned that neither al-Rāzī nor al-Suhrawardī are outright skeptics. They both think that we have immediate acquaintance with things [T26], for instance through sense-perception, and that such acquaintance is the basis for all our conceptions, something for which al-Rāzī uses the *kalām* expression "necessary knowledge (*ʿilm ḍarūrī*)" [T17]. (In one exceptional passage al-Rāzī does seem to suggest that it might be possible to "acquire" further conceptions indirectly [T24].)

Al-Rāzī actually poses two paradoxes of inquiry, the one familiar from the *Meno* and a more complex one, which we call the "four options paradox" [T17, T18]. Possibly inspired by a relevant discussion in *kalām* [T30], he rejects the idea that Meno's paradox could be resolved by simply starting from some aspect or point of view one takes on the object of inquiry, because the paradox can simply be re-applied to the aspect of the thing we don't yet know [T17]. He also considers the specific response to Meno's paradox given by the Avicennans, namely that one could move from a nominal to a real definition by going from conceptualization that is "prior to assent" to a fully adequate conceptualization that is "posterior to assent" [T12]. Al-Rāzī rejects this solution, not just because finding real definitions would be very difficult [T20], but also because real definitions are supposed to be conceptualizations according to the Avicennans, whereas finding something in the world that corresponds to a previously formulated conceptualization is a case of assent, not conceptualization [T18]. Al-Rāzī himself is happy to accept that we can make claims—that is, provide assents—about the nature of real things, but we can never learn to fully understand them through conceptualization [T23].

As for the four options paradox, this is a meticulous proof against the possibility of making progress in inquiry, on the basis that a quiddity cannot be known through itself, through any intrinsic feature, through any extrinsic feature, or through both kinds of features together. The argument can best be explained using an example. How would we know the essence of *human*? Not through the essence itself, or through all its "intrinsic" features like animality and rationality, since to be in possession of these would presuppose that I already know the essence. Yet neither can I do so through an external "concomitant," as probably envisioned by Avicenna at [T8], since I would need to know that it applies only to the essence I am interested in, and that would again presuppose my knowing the essence already—for this option see also [T22]. Either way, we are impaled on the first horn of Meno's original dilemma.

A similar line of argument is found also in al-Suhrawardī [T25], who concludes that real definitions cannot be given so that in explaining our terms we are only ever using nominal definitions to express what we have already grasped through direct awareness [T25, T26; cf. al-Shahrazūrī's account in T43]. It would be natural to connect this to his famous doctrine of "knowledge by presence" (on which see the Chapter "Knowledge and Perception"): we know things when they are immediately "present" to us not by "coming to understand" them through some process that puts us in a position to give a definition. Al-Suhrawardī also seizes upon a point admitted by Avicenna [T7], namely that at least simple things are immune to definition [T27], see also [T11].

Al-Rāzī's and al-Suhrawardī's critique of definitions may have been influenced by Abū l-Barākāt and his idea that essential definitions cannot be given, because we only ever consider things through a certain conception that will be expressed in a merely nominal definition [T13, T14, T15, and T16]. As Abū l-Barakāt explains in [T15], one and the same thing, or type of thing, can be defined in various ways depending on how one is thinking about it: you could think of the same individual as a human, as a writer, etc. and to each conception will correspond a distinct nominal definition. Al-Rāzī points out that there's no arguing with this sort of definition since it is just an explanation of what someone means by a given term [T23]; argument only comes in once we are dealing with assent rather than conceptualization [T19]. In other words, if someone says "by 'human' I mean an animal that walks on two feet" they are just telling me what conception they associate with a word, and I can hardly tell them that this is a mistake, but if they say "that object over there is a human" I can disagree with them and point out that the object does not in fact satisfy their concept ("no, it's actually a statue, not an animal that walks on two feet"; see also [T43]). So while Abū l-Barākāt, al-Rāzī, and Suhrawardī are skeptical about the prospects of going beyond nominal definitions, this does not imply that for them we are each trapped within a subjective point of view on the world that no one else can correct.

These seem to be rather formidable objections to Avicenna's solution to the paradox of inquiry, and indeed to his whole epistemology. But it turns out that it is Avicenna, not al-Rāzī or al-Suhrawardī, who finds the most supporters in the subsequent tradition. After Avicenna, Meno's paradox was formulated in purely logical terms and rejected on this basis [T32]. Maybe even more importantly, a number of thinkers respond to the paradoxes formulated by al-Rāzī, usually by offering some version of an "aspect" or "partial knowledge" solution (for the basic idea see [T42]). More specifically, a number of authors think we can after all use concomitant properties as a route to knowledge [T28, T29, T39]. One point made here is that one can know a concomitant feature and use it to

know the essence, without already knowing *that* it is a specific and proper concomitant of the essence; only the latter would presuppose knowledge of the essence [T29, T33]. We find al-Abharī and al-Kashshī suggesting that even accidental properties, never mind necessarily concomitant ones, could be enough [T37, T38].

Also common is adopting al-Rāzī's approach of talking about the paradox in terms of "parts and wholes," as at [T21], but insisting against him that we can come to know a whole if we first know its parts; this is stressed especially by al-Abharī and al-Khūnajī [T32, T33, T34, T35]. Many post-Avicennan philosophers bring up the metaphysics of parts and wholes in this context, questioning whether the totality of parts equals the whole, or we instead need to add a "form of arrangement" (*hay'a ijtimā'iyya*); or possibly the whole is not even the same as parts plus their arrangement [T33, T38, T39].[3] Al-Kātibī agrees, and adds the *ad hominem* point that knowledge through "detailed" nominal definitions, which al-Rāzī thinks is possible, would be rendered impossible by his supposed paradox just as much as real definitions would [T41]. But some thinkers believe that working towards a more "detailed" account of something we at first grasp only nominally, a procedure called *tafṣīl*, would actually give us a solution to the paradox [T36, T44, T45] (it's not always clear whether, in saying this, they intend to agree with al-Rāzī or disagree). A lengthy passage on *tafṣīl* found in al-Kashshī proposes that we reach definitions by gathering together the parts of a quiddity, which are not merely taken as a kind of disordered list but made into a unity by imposing a "form of arrangement" [T38].

Finally it should be added that issues were raised concerning circularities that arise from the mere notion of having definitions.[4] For example al-Āmidī raises the worry that defining "definition" would lead to a regress [T31], while al-Sāwī poses, but then dismisses, the breathtakingly broad puzzle that the laws of reasoning in general might stand in need of justification [T10].

The upshot of this material would seem to be that the post-Avicennan tradition was much more concerned with general skeptical worries than Avicenna himself. Al-Rāzī and al-Suhrawardī, especially, moved in a rather skeptical direction without, as we have seen, denying the possibility of knowledge altogether: they simply denied that we can have knowledge of the sort the Aristotelians had envisioned. But it is noteworthy that even this step in a skeptical direction is one that few others were willing to take.

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3 This discussion may remind the contemporary reader of the recent debates in Neo-Aristotelianism on parts and whole; see further K. Koslicki, *The Structure of Objects* (Oxford: 2008).

4 M. Özturan, "An Introduction to the Critique of the Theory of Definition in Arabic Logic: Is Complete Definition Circular?" *Nazariyat* 4 (2018), 85–117.

Texts from: Plato, Aristotle, Avicenna, al-Sāwī, Abū l-Barakāt al-Baghḍādī, Fakhr al-Dīn al-Rāzī, al-Suhrawardī, al-Sakkākī, Sayf al-Dīn al-Āmidī, al-Khūnajī, al-Kashshī, Athīr al-Dīn al-Abharī, Naṣīr al-Dīn al-Ṭūsī, Najm al-Dīn al-Kātibī al-Qazwīnī, Ibn al-Nafīs, al-Shahrazūrī, al-Samarqandī, al-Ḥillī.

[T1] Plato, *Meno*, 80d6–10, tr. Lamb.

[***Meno's paradox***]

Why, on what lines will you look, Socrates, for a thing of whose nature you know nothing at all? Pray, what sort of thing, amongst those that you know not, will you treat us to as the object of your search? Or even supposing, at the best, that you hit upon it, how will you know it is the thing you did not know?

[T2] Aristotle, *Posterior Analytics* A, 1, 71^a25–71^a30, tr. Barnes.

[***Aristotle's solution to Meno's paradox***]

Before the induction, or before getting a deduction, you should perhaps be said to understand in a way—but in another way not. For if you did not know if it is *simpliciter*, how did you know that it has two right angles *simpliciter*? But it is clear that you understand it in this sense—that you understand it universally—but you do not understand it *simpliciter*. (Otherwise the puzzle in the *Meno* will result; for you will learn either nothing or what you know.)

[T3] Aristotle, *Posterior Analytics* B, 10, 93^b29–93^b36, tr. Barnes.

[***Aristotle on nominal definition***]

Since a definition is said to be an account of what a thing is, it is evident that one type will be an account of what the name, or a different name-like account, signifies—e.g. what triangle signifies. And when we grasp that this is, we seek why it is; but it is difficult to grasp in this way why a thing is if we do not know that it is. The explanation of the difficulty has been stated already—that we do not even know whether it is or not, except accidentally.

[T4] Avicenna, *Ishārāt*, 40.13–41.5 [part. trans. Inati, mod.]

[*ignorance and learning in terms of* taṣawwur *and* taṣdīq]

The unknown is analogous to the known. Just as something may be known through mere conceptualization (*taṣawwur*), such as our knowing [41] the meaning of the word "triangle," or may be known through conceptualization with assent (*taṣdīq*), such as our knowing that the angles of a triangle are equal to right angles—in the same way, something may be unknown in conceptualization, so that its meaning is not conceptualized until it is grasped (*yataʿarrafa*), such as the binomial and the disjunctive, or it may be unknown in assent until one learns it (*yataʿallama*), for instance that the square on the diagonal is equal to the squares on the sides of the right angle which it subtends.

[T5] Avicenna, *Shifāʾ*, *Burhān*, 1.6, 74.13–76.18 [trans. Marmura, mod.]

[*Avicenna's solution to Meno's paradox*]

It is reported that Meno, who spoke with Socrates about the futility of teaching and learning, said to him, "someone who inquires after some knowledge or other will either be inquiring into what he [already] knows, so that his inquiry is futile, or else inquiring into what he does not know, and then how would he know it, once he attains it? It's like searching for a runaway slave one does not know. If one finds him, one would not recognize him."

Then Socrates, to refute him, [75] undertook to present [Meno] with a geometrical figure, establishing for him how the unknown, after being unknown, is captured through the known. But this is not logical discourse. For he only brought forward an argument to show the possibility of the very thing that Meno had claimed to be impossible. But this does not resolve the doubt [as such]. But Plato did undertake to resolve the doubt [as such], by saying that learning is recollection. Thereby he tried to convey that the object of inquiry had been known prior to the inquiry, and prior to its being attained, but was inquired into simply because it had been forgotten. Once the investigation leads to the object of inquiry, it is remembered and "learned." Thus the inquirer would know something he already knew. It's as though Plato gives in to the doubt, and seeking to escape it falls into an impossibility. This is something we have explained thoroughly in our summary of the book *On the Syllogism*.

Nonetheless, we say in addition: if the object of inquiry is known to us in every respect, we would not inquire into it, nor would we do so if it is unknown to us in every respect. But in fact it is known to us in two respects, and unknown in one respect. For it is known to us actually in conceptualiz-

ation (*bi-l-taṣawwur bi-l-fiʿl*) and potentially in assent (*bi-l-taṣdīq bi-l-quwwa*), while being unknown to us actually only insofar as it is specified, even though it is also known to us actually as not being specified.[5] So if we have previous knowledge that every thing which is of a certain character is of that character, not through inquiry but through natural understanding (*fiṭrat ʿaql*), or through sensation, or in some other way, we potentially have knowledge of many things. If we observe some of these particulars through sensation, without inquiring into them, then at that point they would actually fall into the class of primary knowledge. In a way, this would fit with the way things go in Meno's example of the runaway slave. For we would initially know the object of inquiry conceptually, just as we would initially know the runaway slave conceptually. Also we would know ahead of time what would bring us to knowing it by assent, just as we would know the road [taken by the slave] before we find out where the slave is. For if we follow the path to the object of inquiry, and have a previous conception of it itself, and of the road leading to it, then when we reach it, we will at that point have perceived the object of inquiry. Just as, when we follow the path to the runaway slave having previously conceived him, and the road leading to him [76], then we'll recognize him once we reach him, even if we had never laid eyes on the runaway slave at all, so long as we've conceived some distinguishing mark (*ʿalāma*) for him, such that anyone who has this mark is our runaway slave. If, in addition, there arises some knowledge—not by acquisition, but by coincidental observation, or by acquisition, inquiry, testing, and recognition—so that we find that mark on a slave, we will know he is our runaway.

So the distinguishing mark is like the middle term in the syllogism, and our grasping that mark in the slave would be like the minor term. Our knowledge that whoever has this mark is our runaway is analogous to our previously having the major premise, while our finding the runaway would be like the conclusion. This runaway, moreover, would not have been known to us in every respect; otherwise we would not have sought him. Rather, he was known to us by way of conception, but we didn't know where he is. We would seek him insofar as he is unknown, not insofar as he is known. Once we recognize him and catch him, then through the inquiry we come to have knowledge we previously lacked. This happens thanks to the combination of two causes of knowledge, firstly the path and its leading to him, secondly his falling under sensation.

It's like this with unknown objects of inquiry. They are recognized by a combination of two things. Firstly, something we have in advance, namely, that B is

5 In other words, we do not actually know it in a specific way, but we do know that we don't actually know it in this way.

A, which parallels the first cause in the example of the runaway slave. Secondly, something that happens at some point, namely our recognizing through sensation that C is B, which is equivalent to the second cause in the example of the runaway slave. Just as in that case, the two causes yield apprehension (*idrāk*) of the runaway slave, so here the two causes yield the apprehension of the object of inquiry. We do not admit [Meno's] claim that whatever one does not know in every respect cannot be known when it is attained. Rather, it is that of which one is ignorant in every respect that cannot be known when it is attained. When one has previously known some item, this would be potential knowledge of some part of the object of inquiry, like a distinguishing mark for it, and one only needs to connect with something to render [the knowledge] actual. As soon as it is connected to whatever actualizes it, the object of inquiry is attained.

[T6] Avicenna, *Manṭiq al-mashriqiyyīn*, 34.6–35.8

[*nominal definitions*]

The thing that is called "definition" is either in respect of name (*al-ism*) or in respect of essence (*al-dhāt*). The one in respect of name is "a detailed statement (*qawl*) that signifies the meaning (*mafhūm*) of a name according to its use," whereas the one in respect of essence is "a detailed statement that makes an essence known in terms of its quiddity." Whenever somebody uses an expression (*lafẓ*), if he chooses the wording (*ʿibāra*) for the meaning (*maʿnā*) he intends, its defining is up to him, so that there is no quarrel with him at all, unless he deviates from what he intended in one of the ways we will mention [later on]. When he composes meanings as it is suitable, and then says about the combination: "that is what I intend when I use the expression," then this will be the definition of this expression, so long as he makes no mistake in the composition, of the sorts you will hear about [later on]. Yet [this definition] would not be of such a kind that, if you were to attach some additional meaning (whether it is specific to what one has composed or not) to what you posited, you could claim that what one has composed plus the addition is the meaning of the expression that has been defined earlier, so that one could say that it is the same (*huwa huwa*). For instance, if one uses "human" when talking and is asked what one means by it, one might respond: "an upright standing animal with uncovered skin and two feet." Then someone might say that he has just defined man in respect of the usage of its name, and you cannot have any argument with him, since there exists an animal that has such an attribute, and that attribute would express some aspect of it, and it is not forbidden to give a name for it under this aspect, which is expressed with this attribute. Most of what we

accept in matters of language is far from what is acceptable in science. Nevertheless, if you add "capable of laughing" to what was composed and you ask: "Do you mean by ["human"] an upright, standing, animal, capable of laughing, with uncovered skin and two feet?" and he responds: "Yes, that's what I mean," or you ask: "Do you mean by it an upright standing animal with two feet [35] by nature, which has uncovered skin *and can write*?" and he responds: "Yes, that's what I mean," then he has made a mistake. For what the combination of predicates without "capable of laughing" or "capable of writing" expresses is not the same as what it expresses together with one of them. When "capable of laughing" in particular is added to them, it's not as if no meaning has been added to them; unless the one who says doesn't, with that composition, intend primarily to signify the meaning of a name, but instead it would be as if he intended *something* to which [those attributes] would attach and belong, not as its attachments and accidents, but as its essence, which is lesser known than they are. Yet this would not be a definition in respect of a name, but would be making something known incompletely with a [mere] description, which we will unfold in what follows. The same goes for when we remove something from what was posited in the composition, and what remains would be either equal [in scope to the original definition] or more general.

[T7] Avicenna, *Manṭiq al-mashriqiyyīn*, 36.18–22

[***the impossibility of defining simple entities***]

As for the simple item (*al-amr al-basīṭ*), one does not seek in its case for any real genus or specific difference, nor for anything like what we called "real definition," since there is no such thing [for simple entities] at all, even though some people imagined there to be. Rather one seeks to grasp [a simple entity] through its common concomitants and proper accidents while adding some of them to others, as one adds the specific difference to the genus. You should know that most definitions which one provided for those things are not [really] definitions, and most of the genera provided for them are their common concomitants, not genera.

[T8] Avicenna, *Taʿlīqāt*, 71.1–72.6

[***the impossibility of grasping essences directly***]

The grasp (*wuqūf*) of the true realities of things does not lie within the capacity of humankind. What we understand are only the properties (*khawāṣṣ*),

concomitants, and accidents of things. We do not understand the constituent specific differences for each of them, which would refer to its true reality; rather, we understand that they are the things to which the properties and accidents belong. For we understand the true reality of neither the First, nor intellect, nor soul, nor the celestial sphere, nor fire, nor air, nor water, nor earth. Nor do we understand the true realities of accidents. For instance, we do not understand the true reality of substance, but only something to which belongs the property "existent, not-in-a-subject." But this is not its true reality. Nor do we understand the true reality of body, but something to which belong the properties of height, length, and breadth. Nor do we understand the true reality of animal, but only something to which belongs the property of perception and action. For perceiving and acting are not the true reality of animal; rather, they are property or concomitant. One does not perceive real specific differences. That's why there is disagreement [between people] over the quiddities of things: because each of us perceives a different concomitant, and makes judgments in accordance with this concomitant. We merely affirm some given, specified (*makhṣūṣ*) thing, and understand that it is specified by one or many properties. Then, we understand that this thing has other properties, through the intermediary of what we first came to understand. Then [72] we pass on towards grasping its "that-ness (*inniyya*)," as is the case of soul, place, etc. We affirm their "thatness" not on the basis of their essences, but by relating them to the things which we understood [before], or through some accident or property that belongs to them. For instance, in the case of soul, we observe a moving body and we affirm a mover for that motion. Then we observe a motion different from the motions of other bodies, and so understand that a specific kind of mover belongs to it, or that it has a proper attribute (*ṣifa khāṣṣa*) that doesn't belong to other moving [bodies]. Then we follow from one property to another, and one concomitant to another, so that through them we arrive at the "thatness" [of soul].

[T9] Al-Sāwī, *Baṣā'ir, Manṭiq*, 26.10–18

[***learning in terms of conceptualization and assent***]

Regarding those things that are unknown, one seeks either mere conceptualization (*taṣawwur*) or an assent (*taṣdīq*) that it would have to be either a negation or an affirmation. Conceptualization is simply the form of something occurring in the mind. [...] [26.15] Assent, on the other hand, is a judgment (*ḥukm*) of the mind about two meanings that have already been conceptualized, where one is judged to be the other, or not to be the other, along with a belief that this

judgment is correct, in other words, that this conceptualization in the mind corresponds to extramental existence.

[T10] Al-Sāwī, *Baṣā'ir, Manṭiq*, 27.14–23

[*circular justification of the rules of logic*]

One might pose the following problem: to grasp some unknown object of knowledge through discursive, intellectual thought, one must argue using some rule (*qanūn*) of the art [of logic]. Is this rule itself one of the self-evident, primary [truths] that require no discursive thought (*fikr*)? Or is it one of the discursive objects of knowledge that themselves require a rule? If the former, there is no need to learn it. If the latter, then it requires itself, and prior knowledge of it is a condition for knowing it, which is absurd. Answer: [...] [27.22] among the things one learns, some follow the pattern of recollection and reminding (*al-tadhkīr wa-l-tanbīh*) and require no prior rule.

[T11] Al-Sāwī, *Baṣā'ir, Manṭiq*, 81.12–82.2

[*on defining composites*]

A perfect definition is a statement that signifies the quiddity of something. This teaches us that a single term cannot be a definition, since statements are composite. Similarly, it teaches us that whatever is not composed in its true reality (*ḥaqīqa*) and quiddity has no definition. [...] [81.19] The most eminent among recent scholars [i.e. Avicenna] asserted in the [*Pointers and*] *Reminders* that definition must be composed out of genus and specific difference. If this leads to the result that [the definition] cannot be composed from constituents other than genera and specific differences, then it is not so. For [82] something may be composed with an accidental feature, with each of the two [sc. the thing and its accident] constituting the composite, though neither is a genus or a specific difference, as with "white body" insofar as it is white body.

[T12] Al-Sāwī, *Baṣā'ir, Manṭiq*, 85.5–20

[*nominal and real definitions*]

A definition signifies a quiddity, and provides the conceptualization of an essence only once one knows that the thing exists. Otherwise, it will just be a matter of signifying the meaning of a name by explaining what it means.

But once someone does know that [the thing] exists, the very same statement will be a matter of signifying the quiddity in terms of the thing's essence. The [kind of] conceptualization we talked about at the start of this book, the one that is prior to assent, is conceptualization in terms of the meaning of a name, not in terms of the essence. But conceptualization in terms of essence comes *after* knowing the thing exists and forming an assent concerning it. *Let no one say*: if definition provides a conceptualization only once one has learned that [the thing] exists and formed an assent about it, and assent must follow on conceptualization, then definition only provides conceptualization after conceptualization, yielding a vicious circle. For [the kind of] conceptualization that is presupposed by assent is conceptualization of the meaning of the name and what is intended by it. For someone who doesn't even know the meaning of the word "definition" cannot judge whether it exists or not. By contrast, the conceptualization in terms of essence need not be prior to assent; rather it is posterior to it, as we have shown. Furthermore, in the case of the conceptualization that is prior to assent, there is no need that upon knowing that the thing exists, one will thereby conceptualize the true reality of its essence and quiddity by conceptualizing its essential [constituent properties]. Rather one might conceptualize it in respect of certain accidents, or its concomitants, or only in respect of some of its essential [constituents], or one might even conceptualize it as being other than it [actually] is. Usually when common folk form conceptualizations, they do not conceptualize the true reality of essence through the judgements of assent; as with their conceptualization of the meaning of "spirit," "intellect," "prime matter," "nature," and so on.

[T13] Abū l-Barakāt, *Muʿtabar*, vol. 1, 34.14–35.10

[*words, concepts, and recognition*]

Forms in the mind may be realized for things that exist among concrete individuals, as their representations and similitudes (*muthul wa-ashbāḥ*); humans apprehend them in the mind without apprehending whatever [corresponds to them] among concrete existents. They are the primary referents of words, and by means of them, words signify concrete existents secondarily, for instance the meaning of "horse" or of "man," or even of "Zayd" and "ʿAmr": anything whose mention yields a representation in the mind just as if one were observing it, even if it is not present as a concrete existent that is being apprehended. Thus, once something is concretely present, and a representation and form is realized for it, one may say, "This is such-and-such." Otherwise there would be no way for someone who has once seen a person, who then went away,

to know upon seeing him again that he is that initially [seen person], and there be no difference between the two encounters. Indeed, there would not even be any way for someone who has seen one or more individual humans, upon seeing yet another person, to recognize (*yaʿrifuhū*) that person as a human. His recognizing [that person on the second occasion is a human] is simply through the identification of the initial recognition and form realized in the mind from the first [occasion] as his form [or as a form] corresponding to him [sc. person who was seen]. Recognizing that the person seen on the second occasion is the same as the one seen initially, is also recognizing that his form, which [35] was initially represented in the mind, corresponds to that which one perceives on the second occasion. When this form is represented in the mind on the basis of the observation of concrete things, one speaks of "conceptualization (*taṣawwur*)," whereas [when forms are represented in the mind] on the basis of words, one speaks of "comprehension (*fahm*)." When [the form] corresponds to what has been perceived, after representations have arisen, one speaks of "recognition (*maʿrifa*)." Of course, conceptualization precedes recognition and understanding. If someone says a word, and you did not conceptualize its meaning before that, then you do not understand what he was saying, nor does the linguistic utterance signify that meaning for you. If and only if there was a preceding conceptualization, and [the speaker] is capable of providing signification through linguistic utterance, can you understand what he was saying. Along the same lines, if someone sees something for which he has previously conceptualized no meaning, we do not say that he "recognizes." Only if he has already conceptualized its meaning, and then perceives it on a second occasion do we say that he has "recognized," so long as what he perceives corresponds to what he initially conceptualized.

[T14] Abū l-Barakāt, *Muʿtabar*, vol. 1, 68.11–14

[***nominal definition as an alternative to real definition***]

If defining is difficult in some cases and at some times, nevertheless this is not a difficulty in reality, since nominal definition [only] reports whatever results from the thing in the mind. It is that to which one gives a name, and for which mental and semantic (*maʿnawī*) unity arises.

[T15] Abū l-Barakāt, *Muʿtabar*, vol. 1, 63.12–17

[***one thing has many nominal definitions***]

One and the same thing may have multiple names in respect of multiple definitions, and multiple definitions in respect of multiple names. All these are in respect of multiple attributes and descriptions. For instance, "human" [may be named and defined] insofar as he is body, animal, human, writer, doctor, or knower. He has a definition in respect of each of [these] names. Nevertheless, even though a definition would be in respect of names, it is only a definition insofar as it belongs to the existent thing named, so that the result is an existing true reality. It is in relation to the thing defined that it is a definition.

[T16] Abū l-Barakāt, *Muʿtabar*, vol. 1, 66.5–13

[***nominal definitions suffice to express knowledge***]

We say: if [specific differences] are unknown, then this is either just insofar as they are distinguishing specific differences [in the mind], or insofar as they are [extramental] attributes that exist in the subject of attribution. If [they are unknown] as the attributes that belong to the subject of attribution, then one cannot know them. You have learned that someone who understands something (*ʿārif*) names whatever he has understood, just insofar as he understood it, and defines that which he has distinguished just insofar as he has distinguished it. Definition is a definition in terms of name (*bi-ḥasab al-ism*); and the name and the definition are in terms of understanding (*al-maʿrifa*). Now, someone who has named something just insofar as he understands it then explains (*yufassiru*) the name with a definition, which is a detailed analysis of [his] understanding (*tafṣīl al-maʿrifa*). The unknown does not enter the definition, insofar as someone has given a name and a definition. If something is unknown, this does not undermine the knowledge of what is known insofar as it is knowledge. For instance, when we understand of something, like snow, that it is a white body, but don't know whether it is cotton or snow, our ignorance as to whether it is snow or cotton does no harm to our understanding of its being a body and its whiteness. So, if we give it a name that refers to whatever we have managed to understand, and then define it in respect of this name, we have just performed the explication of a name and displayed our understanding, insofar as we understand it. But whatever we did not know remains unknown to us until we learn some other way.

[T17] Al-Rāzī, *Muḥaṣṣal*, 16.5–18.5

[*two paradoxes of inquiry*]

When we perceive a true reality, we either express it just in itself, without making any negative or affirmative judgment about it—which is conceptualization—or we do make such a judgment, which is assent. On my view, no [conceptualization] can be acquired [epistemically], and this for two reasons:

[17] (a) If one is not aware of the object of inquiry, inquiry is impossible. For, if one is entirely unaware of something, the soul undertakes no inquiry into it. If on the other hand one *is* aware of it, inquiry is again impossible, since it is absurd to make something available when it is already available (*taḥṣīl al-ḥāṣil*). *If someone says*: [the inquirer] is aware of [the object of inquiry] in some respect or other, *I respond*: the respect in which he is aware of it is distinct from the respect in which he is not aware of it. He cannot inquire into the first [respect], since it is [already] available. Nor can he inquire into the second [respect], since he is absolutely unaware of it.

(b) A quiddity may be understood (*taʿrīf*) either (b1) through itself, (b2) through that which is intrinsic to it, (b3) through that which is extrinsic to it, or (b4) through a combination of these last two options [that is, both intrinsic and extrinsic features]. (b1) It is absurd that one should come to understand [a quiddity] through itself, since what allows understanding is known before that which is understood. If we understood a thing through itself, we would need to know it before knowing it, which is absurd. (b2) It is absurd that one should come to understand it through intrinsic features. For the understanding of it would be either (b2a) through the totality of its intrinsic features—which is wrong, since [the object of inquiry] is identical to that totality, so that understanding it through the totality would just mean understanding it through itself, which is absurd [because of the argument against (b1)]—or (b2b) it would be through only some parts [of the intrinsic features], which is absurd. For one understands a composite quiddity only by means of understanding its parts. If a part of the quiddity allowed us to understand it, then that part would allow us to understand all parts of the quiddity. Then this part would allow us to understand itself—which is absurd [in itself]—as well as the other parts, implying that something gives us to understand that which is extrinsic to it. (b3) This is in fact the third option, but it is absurd [too]. For different quiddities can share the same concomitant. This being so, an extrinsic attribute cannot help us to understand a quiddity whose attribute

it is. If it did, one would need to know that it is attributed only to this and to nothing apart from it. But knowing this would require either a conceptualization [18] of this thing to which [the extrinsic feature] is attributed, or of everything other than it. This is absurd, because the former implies a vicious circle, while the latter would require that one first conceptualize the infinite totality of other quiddities all at once, as distinguished from one another. (b4) As for grasping it through a combination of the intrinsic and the extrinsic, the falsehood of the last two options implies the falsehood of this one.

Let no one say: but we find souls inquiring into the quiddity of "angel" and "spirit," so what do you say about this? *For we respond*: this is a matter of inquiring after an explanation of a name, or a demonstration of the existence of the thing that has been conceptualized. But both are a matter of assent.

[T18] Al-Rāzī, *Manṭiq al-Mulakhkhaṣ*, 105.2–7

[***Meno's paradox and the distinction between conceptualization and assent***]

You should know that the ancients already posed this problem about the impossibility of grasping the unknown. A response has been given, concerning inquiries that involve assent (*al-maṭālib al-taṣdīqiyya*): when we inquire whether the world is originated or not, there is already conceptualization of "the world" and "origination"; what is unknown is the relation between them, which is either affirmed or denied, and so on. When we discover the object of inquiry, we know that what has been discovered is what we were seeking in the first place, through conceptualizations that were already known. However, this solution does not apply to conceptualizations.

[T19] Al-Rāzī, *Manṭiq al-Mulakhkhaṣ*, 111.2–11

[***nominal definitions are not proven, but real definitions are***]

On the fact that definition cannot be acquired through proof

This is because definition is nothing but a detailed analysis (*tafṣīl*) of something that a name signifies vaguely (*bi-l-ijmāl*). There can be only verbal argument about such a thing, and this does not amount to an intellectual inquiry. Besides, argument [only] concerns assent.

Further, the definition of something is the sum of its essential [constituents]. But for any given thing, nothing is better known than the sum of its constituents, but a proof would require that this be the case. Hence definition cannot be acquired through a proof.

However, this only applies if the definition concerns a name. If it concerns true reality—where one indicates a concrete existent and claims that its true reality is composed out of this and that—then obviously a proof is required.

[T20] Al-Rāzī, *Manṭiq Al-Mulakhkhaṣ*, 118.2–10

[***the difficulty of defining and nominal vs. real definitions***]

On the difficulty of composing a definition

This is owing to the difficulty of grasping the proximate genus and the proximate specific difference, as has been established. Once the Master [sc. Avicenna] established this, the author of the *Muʿtabar* [sc. Abū l-Barakāt] disagreed, saying: in fact this is very easy, since definitions are definition of names, and names are names of items grasped by the intellect. When any item is grasped in the intellect, surely one will have a perfect grasp of the part that is shared with other things, and also of the part that is distinctive of it. From this point of view, definition is easy.

Fair judgment: if the goal of [the definition] is to provide a detailed analysis (*tafṣīl*) of the referent of a name, then it is as the author of the *Muʿtabar* says. But if its goal is to grasp existent quiddities, then this is very difficult.

[T21] Al-Rāzī, *Nihāyat al-ʿuqūl*, vol. 1, 110.3–111.7

[***the "form of arrangement" is not a solution for definition***]

Someone might say: understanding (*taʿrīf*) the true reality through the sum of its parts is inconceivable. For that which provides understanding[6] of this true reality would be either (a) each of those parts singly, or (b) the totality, when they are put together.

(a) The first is false, for two reasons. (a1) Firstly, because it will be shown that one single part of a true reality cannot provide understanding of the true reality as a whole. (a2) If this were the case, mentioning just one of the parts would be enough, without mentioning all of them.

6 Reading *muʿarrif* instead of *maʿrifa*.

(b) The second is false, because the totality of true reality's parts is either (b1) identical to the true reality, or (b2) a part of it, or (b3) external to it. Case (b1) would imply understanding something through itself, and you've already learned that this is false. In case (b2), the totality of a thing's parts would be among its parts, which is absurd. In case (b3) the totality of a true reality's parts would have to be distinct from the true reality, which is [111] obviously false. And even if we conceded this, the understanding in question would be descriptive (*rasmiyyan*) [i.e. an extrinsic signification, not real, definition]. [...]

[111.3] *One cannot say*: we grasp the form of the arrangement of those parts (*hay'at al-ijtimāʿ*) through those parts, or vice-versa. *For we say*: the form is among the parts of that composite quiddity. Yet it is extrinsic to the quiddities to which it applies, and vice-versa. Therefore understanding such an accident through that to which it applies, or vice-versa, would be understanding something through that which is extrinsic to it; but this is different from the option we are presently discussing.

[T22] Al-Rāzī, *Nihāyat al-ʿuqūl*, vol. 1, 112.7–18

[***specification problem for descriptions***]

There are also problems with understanding (*taʿrīf*) a true reality through its concomitants. For if we say, about a specified true reality, that it is the one that implies a certain concomitant, then what we are seeking to understand is either (a) the specificity (*khuṣūṣiyya*) of that true reality in itself, or (b) the fact that it implies this concomitant. (a) The first is false. For knowing that [that true reality] produces a certain concomitant does not require knowing its specificity. Things that differ in true reality can share one and the same concomitant. Given that this is possible, when the knowledge that [the true reality] produces this concomitant is present, this doesn't necessarily entail the presence of that specific quiddity. True, sometimes concomitants are such that they belong to only one subject of concomitance; but this specification can be understood only once one has understood the subject of concomitance, and [once] sensation or demonstration has indicated that it is specified with that concomitant. In which case, understanding the subject of concomitance is prior to understanding that specificity, and it cannot be acquired through this concomitant, on pain of circularity. (b) The second is false too, since the fact that it produces such a concomitant has been posited as what makes it possible to understand it. So, if we made it the same as the sought conclusion, then this would be understanding something through itself, which is absurd.

[T23] Al-Rāzī, *Nihāyat al-ʿuqūl*, 115.3–116.12

[***how arguing about definition is possible at all***]

If it is said: mightn't someone assume that "human" is, for instance, rational animal? This would be an assumption (*daʿwā*) on his part, so why can't he seek a proof that would confirm his assumption? *We say*: His statement that "human" is rational animal might be put forward (a) as a definition, in which case it cannot be rejected, or (b) as an assumption, in which case its rejection is possible. (a) In the former case, which is when the one who says "human is rational animal" intends to indicate this conceptualized quiddity, without making any affirmative or negative judgement about it, one cannot reject it or seek a proof [for it]. (b) But in the latter case, which is when the intention is to judge that animality and rationality hold of the essence of human, one can undertake to reject it or seek [a proof] for it. This would not be a definition, though, but rather an assumption.

If it is said: it follows from what you have said that one cannot undertake any objection or dispute against a definition; yet inquirers agree that these may be undertaken. [116] *We say*: The truth, on our view, is that so long as one adds no assumptions to the definition, one cannot undertake any objection to it. For instance, when someone defines "knowledge" as that which makes its subject [sc. the knower] qualified by attributes of action, and someone else says to him, "this is prone to the objection that there can be knowledge about the necessary and the impossible, for this is knowledge yet it would be wrong to ascribe the attributes of action [in this case]," then this objection is undertaken only in light of having conceded that there is knowledge connected to the impossible. Once one concedes this and agrees with it, then surely the objection to this definition may be undertaken. But if we suppose that there has been no concession to this assumption, then the objection cannot be undertaken against the definition alone. Similarly, one cannot dispute a definition unless one has conceded some assumption. For true realities do not [on their own] contradict each other in their quiddities. If someone disputes the above definition [of knowledge] by saying that [knowledge] is a belief that yields acquiescence in the soul (*sukūn al-nafs*), there will be no contradiction between those two true realities. For the true reality of that which implies that its subject may be qualified by attributes [of action] does not, just insofar as it is this true reality, conflict with the true reality of a belief that yield acquiescence in the soul, just insofar as it is that true reality. And if there is no conflict between the true realities, then no dispute over the definitions can ensue.

[T24] Al-Rāzī, *Maʿālim*, 13.6–7

[*immediate and acquired conceptions*]

Immediate (*badīhiyya*) conceptions are, for instance, when we conceptualize the meaning of heat or cold; acquired conceptions are, for instance, when we conceptualize the meaning of angel or jinn.

[T25] Al-Suhrawardī, *Ḥikmat al-ishrāq*, 9.11–11.6 [trans. Walbridge and Ziai, mod.]

[*definitions are in fact merely descriptions*]

(§14) Some use the term "definition" for a formula that signifies a thing's quiddity. Such a formula indicates essential [constituents] and the features that are intrinsic to the thing's true reality (*ḥaqīqa*), whereas a formula that allows the true reality to be known by means of external accidents is called a "description." Yet, consider the example of body. Some affirm that body has parts, but others are in doubt, while still others deny it. (You will learn later what these "parts" are.) For most people, these parts do not belong to the meaning (*mahfūm*) of the thing named. Instead, the name signifies only the totality of the concomitants that they conceptualize. Or consider water and air. When it is affirmed that these have parts that cannot be sensed, some people will deny it. So those parts are not included in the meaning of "water" and "air" for them. Even if body is a part of every corporeal reality, and is as we have said, people will only conceptualize those parts apparent (*ẓāhira*) to them. It is those aspects that are intended by the name, both for the one who coined the name and for them [sc. the people who deny invisible parts]. If this is the case with sensible things, how will it be with something that cannot be sensed at all! Further, [10] consider that humans have something through which they have the true reality of humanity, but this is unknown to most people and even to the elite among the Peripatetics. For the latter define "human" as "rational animal," even though the disposition for reasoning is accidental and posterior to the true reality [of human]. But the soul, which is the principle of these things, can be known only through concomitants and accidents. If this is so for the soul, than which nothing is closer to the humans, how will it be with other things when it comes for us to say what is necessarily [true of] them? [...]

[*paradox of inquiry, cf. the second paradox from t17*]

(§15) [10.10] [The Peripatetics] concede that the unknown can only be attained through the known. However, the essential feature that is proper to a thing [sc.

the specific difference] will be unfamiliar to someone who is ignorant of its applying to other subjects. But if it is familiar as applying to anything other than the thing being defined, it will not be proper to the latter. So if the essential feature is proper to the thing, and is neither evident (*ẓāhir*) to sensation nor [immediately] familiar [from this very thing], it will remain unknown, as will the thing defined. If, however, one learns to understand (*ʿurifa*) this proper feature too, then it is understood in the light of things that are more general than it, without that which is proper to it—but then it does not come to be known, given that the situation for the part that is proper will be the same as stated above [in the case of the whole thing]. Thus, the only[7] recourse is features that are sensible, or evident in another way, and that taken together are proper to the thing. You will learn the gist of this in what follows.

Furthermore, someone who enumerates the essential features he understands cannot be sure that he has not overlooked the existence of some other essential feature. Thus, a questioner or opponent may ask him about this, and at that point the person trying to make the thing known cannot say, "if there were [11] some other attribute, I would have known about it," for many attributes are not evident. Nor does it suffice to say, "if the thing had had another essential feature, we couldn't have come to understand the quiddity without it," since one may respond, "the true reality is understood only when all its essentials are understood." Thus, if it remains possible that some other essential feature has not yet been perceived, one cannot be certain of understanding the true reality. Thus, it is clear that no one can construct a definition in the way the Peripatetics require, a difficulty which even their master [Avicenna] admits. Therefore, we have definitions (*taʿrīfāt*) only by means of things that are proper when taken all together.

[T26] Al-Suhrawardī, *Ḥikmat al-ishrāq*, 51.14–52.9 [trans. Walbridge and Ziai, mod.]

[***we know through immediate awareness, not definition***]

The Peripatetics have made it impossible to understand anything. For substances have unknown specific differences, and they explain substantiality only through a negative criterion [sc. that a substance is what is not in a subject]. So do soul and the separate [substances], according to them, have unknown

7 Walbridge and Ziai's text omits *illā*, present in Corbin's edition.

specific differences. They define an accident, like blackness for example, as a color that contracts vision. But contracting vision is accidental, and you already know what's the matter with being a color. [52] Thus bodies and accidents would be impossible to conceptualize. And according to them, existence is the most evident of things—you know what's the matter with it [as well].[8]

Furthermore, if conception is assumed to take place by means of concomitants, the concomitants will also have specific properties, and the same difficulty will apply to them too. This cannot be, since it would imply that one cannot understand (*yuʿarrafu*) anything that exists.

The truth is that blackness is just one simple thing. It can be grasped intellectually, with no part of it remaining unknown. It cannot be understood by someone who has not observed what it is like (*yushāhiduhu ka-mā huwa*), but anyone who has observed it doesn't need to come to understand it (*taʿrīf*). It has a form in the mind, just as it has a form in sensation. There is no coming to understand such things. Rather, composite realities are grasped from simple realities: one conceptualizes the simple realities separately, and comes to understand the composite ones by bring them together in some single subject.

[T27] Al-Suhrawardī, *Mashāriʿ, Manṭiq,* 87.11–88.14

[*the impossibility of defining simple things*]

There is no statement to signify the simple thing that has no parts. For if each part of a composite statement signifies the same simple quiddity, then these [parts] will be synonyms. If, on the other hand, some of [the parts of the statement] signify the [simple] thing while others signify something extrinsic to it, then the totality will not in fact be a definition of [this thing]. Finally, if each part of the expression signifies only part of the meaning, then the thing turns out to be composite, but we assumed it was unitary.

[88] You should know that, when someone acknowledges that the plane is not a magnitude plus something else, both occurring in concrete individuals, but rather its being a magnitude is just the same as its being a plane in con-

8 Al-Suhrawardī considers both being a color and existence as conceptual considerations (*iʿtibārāt ʿaqliyya*), meaning that our knowledge of either does not constitute knowledge of any independent entity outside the mind. See further the chapters on "Essence and Existence" and "Universals" in the *Metaphysics and Theology* volume.

crete individuals; and that color does not occur in concrete individuals having some differentiating feature with independent existence, with the combination of the two being blackness, but rather blackness is one simple thing; and that what has no part in concrete individuals has none in the mind either, since the mental form must correspond to the concrete one, so that if the concrete form has no constitution at all in its true reality, then *a fortiori*, neither does the mental form, given that a thing's constituent cannot be separated from it, either mentally or concretely; then, once all this is acknowledged, it follows that there is no definition for such a thing, but merely a description, if it is to be made known (*yuʿarrafu*).

If the "being a color" of blackness means that it is perceptible to the sense of sight, then this must be subsequent to its quiddity, because something must first be real and only then may it be perceived by the senses. If, alternatively, one took as the specific difference of blackness that it contracts sight, this too would be accidental. For the fact that something contracts sight, or the disposition to do so, is subsequent to its true reality, which is prior in occurrence. That's why the Master Abū ʿAlī [Avicenna] claimed, in the fascicles which he related to the *Easteners* (which are only available split up and incomplete), that simples can be described but not defined.

[T28] Al-Sakkākī, *Miftāḥ al-ʿulūm*, 438.7–16

[***response to al-Rāzī's paradoxes***]

The solution to this puzzle is that "making something known (*taʿrīf*)" can mean two different things: (a) a detailed explanation (*tafṣīl*) of the parts of what is defined, (b) or a mere indication of it, by mentioning a meaning that is concomitant to it without making any further claims. (a) An analogy for defining in the sense of a detailed explanation of all parts what is defined would be: it's like taking up the pearls in the storehouse of forms that belongs to one's interlocutor, and stringing together a necklace in front of him with nothing left over. (b) An analogy for indication by means of a concomitant, be it intrinsic or extrinsic or both, would be: it's like taking up one of those forms in [the storehouse], and pointing at it, and no more. It's for this reason, we say, that one cannot simply reject a definition. For in light of what has just been said, doing this would be like saying, "I do not accept what you have built." Yet one must still be able to give objections [to a definition]. For when someone who has given a definition turns to some other definition, one that undermines the correctness of the first definition, this is like demolishing and knocking down what one has built. Now you should understand.

[T29] Al-Āmidī, *Kashf al-tamwīhāt*, 74.10–75.12

[*critique of al-Rāzī's analysis of descriptions*]

The commentator [Fakhr al-Dīn al-Rāzī][9] *said*: you should know that investigation is needed here: the concomitant feature that allows one to understand something cannot be more general than that thing, nor more specific. Rather it has to be equal [in extension]. Yet such a concomitant feature can be understood only by means of that which has the concomitant, which is its cause, so that each is understood by the other [yielding an absurd circularity].

He [al-Rāzī] *said*: a solution would be that we take, from among the concomitants, those that are more general, and then restrict them by certain [other concomitants], so that the result becomes equal [in extension] to the thing, which implies no circularity. For instance, we might make "quality" understood as "a stable form (*hay'a*) which can be conceptualized without conceptualizing anything extrinsic to it, or relation, or division in its own parts or those of its bearer." Each of the qualifications in this explanation is more general than "quality," so that knowing them does not result in knowing "quality." But then, after we restrict [75] some of them by others, they become equal [in extension] to quality, so that if we mention them in order to understand "quality", no circularity follows.

Our Master [al-Āmidī], *may God help him, said*: his proposed solution to the problem is incorrect, for two reasons. (1) Not every specific feature used in descriptions is of the sort mentioned. Otherwise describing "human" as "the one who writes" would be wrong, since the solution indicated for describing "quality," by restricting certain general attributes by others, would not apply here. (2) The problem is solved only if the point had been as follows: "the true reality of the concomitant feature cannot be understood without first having understood the true reality of that which has the feature. So, if understanding that which has the concomitant feature were to depend on understanding the feature, circularity would result." If however the point is this: "understanding the true reality of something that is being described, on the basis of a concomitant feature, depends on conceptualizing the *fact* that it is concomitant to that which is being described; for it would be absurd to describe something by that which is not concomitant to it. But understanding the *fact* that the feature is concomitant does depend on conceptualizing that which has the feature, since it is absurd that we conceptualize that one thing be concomitant to another

9 Cf. Fakhr al-Dīn al-Rāzī, *Sharḥ al-Ishārāt*, vol. 1, 117–118.

without conceptualizing the latter," then circularity will [still] follow, even if the understanding of the true reality of the concomitant feature does not depend on the conceptualization of that which has the feature.

[T30] Al-Āmidī, *Abkār al-afkār*, vol. 2, 106.2–11

[***on partial knowledge***]

On knowing something in one respect, and not in another

There is disagreement concerning this. Some of our companions [sc. the Ashʿarites] said it is possible, since when one knows that substance exists, but not that it is space-occupying, one does indeed know something in one respect and not in another.

However, the Qāḍī Abū Bakr [al-Baqillānī] said that the known, as such, cannot be unknown in any respect. When someone knows that substance exists, what they know is, in itself, not unknown in any respect. What they do not know, namely that it is space occupying, is something additional (*zāʾid*) to that which is known. What is known is different from what is unknown; it is ruled out that one and the same thing be known in one respect and unknown in another. On the other hand, those who wanted to say that something can be unknown in some respect and known in another, as we have mentioned, said it is possible. But the debate is simply a matter of usage and expression. The truth, though, is what the Qāḍī mentioned.

[T31] Al-Āmidī, *Daqāʾiq al-ḥaqāʾiq*, 90.16–91.22

[***second- and third-order definitions***]

Someone might say: this is coming to understand one definition through another, but doing this would imply an absurdity, so it is itself absurd. The explanation of its implying an absurdity is that it would follow that there is a definition for the definition. But if there is a definition for the definition, then one will have to give a definition of the definition of the definition, and so it would involve an infinite regress, which is absurd. And whatever implies an absurdity is itself absurd.

Certain clever people responded: if we give an absolute definition (*al-ḥadd al-muṭlaq*) for definition, then the definition of a definition of a definition is already covered by it, as is everything that applies to definitions insofar as they are definitions. So no further definition is needed. This would be along the lines

of defining the "even" as that which is divisible into two equal [parts]: that includes the "even" which are the [number of] hands belonging to Zayd and ʿAmr, and the like.

But this calls for further inquiry. For, even though [the definition of a definition] includes [the definition of the definition of a definition], it does only insofar as it is a definition absolutely, since the definition of the definition [91] of a definition is, in its true reality, just like the definition of the definition insofar as it is a definition. Yet this does not absolve us from defining it insofar as it is the definition of the definition of a definition. As such, it does differ from the definition of a definition. For actual definition of a definition is a statement that signifies the quiddity of the definition or its conceptualization. So, even though the definition of the definition of a definition does fall under the definition of a definition, just insofar as it is a definition, it does not fall under it with regard to its distinguishing feature, namely its signifying the definition of the definition of a definition. For instance, the definition of "human" is "rational animal." Though it does falls under definition absolutely, insofar as it is a definition, it does not fall under it in respect of its distinguishing feature, which is its being the definition of "human." For definition taken absolutely does not express [the definition of "human"] even though it does express it insofar as it is a definition. How could it be otherwise, given that the definition of a definition of something is not the same as the definition of this thing itself? For the definition of "human" is that he is "rational animal"; but the definition of his definition is not "rational animal." Rather it is "a statement signifying that by which human is what he is." Likewise, the [third-order] definition of this [second-order] definition is not the same, but rather: "statement signifying that by which the statement is what it is, this latter signifying that by which the quiddity of human is what it is." So in this way, the actual definition of a definition is a statement signifying that by which the definition is what it is, while the definition of the definition of a definition is a statement signifying that by which the statement is what it is, this latter statement signifies that by which the quiddity of the definition is what it is. Although all these definitions do share in the meaning of "definition" taken absolutely, none of them express what is distinctive of the others. Rather, each has a distinctive definition that is different from the definitions of the others.

Still, even though this does yield an infinite regress, as they have argued, it does not mean that whenever we actually mention definition of definition, we have to mention the definition of the definition of its definition, and the definition of the definition of the latter, and so on without end. For to mention the definitions of some things, one does not necessarily have to mention the defin-

itions of all things. Rather, we mention some easy definitions, and avoid the difficult ones. In fact we may avoid them even if they are easy. Nor does it mean that, whenever we actually mention a definition for certain things, we have already actually mentioned the definitions of all things. Rather, what is actual is only what is mentioned and [the mention of everything] is only potential. Hence, though it may be conceded that there is an infinite regress, and no end [to the procedure], still no absurdity results.

[T32] Al-Khūnajī, *Kashf al-asrār*, 63.9–64.1; 64.10–65.12; 66.13–67.17

[***logical analysis of Meno's paradox, with solution***]

Regarding the first [paradox, i.e. Meno's paradox], *it was said*: if it were true that "everything of which one is aware cannot be inquired into," then by contradiction this converts into "everything that cannot be inquired into is not that of which one is aware," which in turn converts to "Something of which one is not aware can be inquired into." But you already said [as well], "Everything of which one is not aware cannot be inquired into," so this is a contradiction. We can also put together [the premise], "Everything which can be inquired into is that of which one is not aware," together with the other premise [namely "Everything of which one is not aware cannot be inquired into"] to yield the conclusion, "Everything which can be inquired into cannot be [64] inquired into," [which is absurd]. [...][10]

[64.10] *Response to this* [i.e. the logical problem], with both premises as predications: the claim "everything conceptualized as something you're aware of, is something you cannot inquire into," implies "everything you can inquire into, is not a conceptualization you're aware of." But this is more general than "being a conceptualization you're not aware of." Hence there is no contradiction between the implication of the first [premise] and the second premise, since you can negate a particular [proposition] in the more general case while affirming the universal [proposition] in the more specific case.

10 The logical analysis of Meno's paradox is also present in al-Abharī's *Kitāb al-Shukūk*, al-Shahrazūrī's *Shajara*, al-Kātibī's *Munaṣṣaṣ*, al-Ḥillī's *Asrar*, and al-Samrqandī's *Qisṭas*, usually formulated in a similar way as we find in the current quotation from al-Khūnajī. According to al-Kātibī, *Munaṣṣaṣ*, fol. 45.29, the logical way of formulating the issue was suggested by certain Sharaf al-Dīn al-Madkūr al-Maraghī who is an otherwise unknown figure.

The aforementioned difficulty generally applies to every dilemmatic argument in which the same predicate is said of opposed subjects. The response given applies only when both subjects are one and the same object, which is described with the opposed predicates. [65]

But *a more general response*, which reveals that the aforementioned difficulty is spurious, is a second one, which goes as follows. If both [premises] are predications, and both are read as dealing with extramental existence, then the second premise cannot be true so long as its subject is read as a negation in some matter [of the proposition]. For then the syllogism would mean, "all for which A holds extramentally is B extramentally" and "all for which A does not hold extramentally is B extramentally." But this is absurd, because the impossible, and other non-existent items, cannot be affirmed as being A extramentally, nor can it be true that they are B extramentally. Otherwise, they would exist extramentally. Therefore the [proposition] need to be metathetic with respect to the subject (*maʿdūlat al-mawḍūʿ*), so that it would mean "all for which not-A holds extramentally is B extramentally." Furthermore, the conversion by contradiction of the first [premise] does not require a metathetic [proposition] with respect to the predicate, since it might be that the predicate is something common too all extramental existents, being concomitant to them. Then there would be no individual instance of the contradictory among the extramental existents, so that the contradictory of the subject would not hold for it extramentally. [...]

[66.13] The *response to the first question* [i.e. Meno's paradox] is that, if one is to undertake inquiry into something, it suffices to be aware of the thing in some respect or other. This does not require that one is aware of it insofar as it is a topic of inquiry. For instance, people inquire into the true reality of angels, without being aware of anything [about them] other than that they are created, celestial, and sent to prophets for the sake of revelation. Similarly one inquires into geometry being aware only that it is useful and surely brings honor. In fact, one may inquire after the referent of a certain name while being aware only that it is the referent [67] of this name. [Al-Rāzī's] claim that the known aspect (*iʿtibār*) cannot be a matter of inquiry, because it is already available, while the unknown aspect cannot be a matter of inquiry because one cannot start inquiring into it, is false. For if one is ignorant concerning something, yet is aware of certain aspects that hold true of it, one can undertake an inquiry into it, as has been shown. Instead, you are only unable to undertake an inquiry into something when you are unaware of that thing and of any aspect that holds true of it; but this is hardly troubling.

The *response to the second question* [i.e. the 4 options paradox] is as follows. We do not concede the impossibility of coming to understand something through some of its parts. Nor is it impossible to gain understanding of the whole without having gained understanding of the part. Rather, while understanding (*maʿrifa*) of the whole is impossible without understanding of the part, it is not impossible that one *come to understand* (*taʿrīf*) the whole without coming to understand the part. For sometimes there may be no need for you to come to understand the part, whereas there is a need for making the whole understood. Or at other times, one might need to come to understand the part as well, but this may be achieved through something other than that by which one comes to understand the whole. Some claim, "the one who bestows existence upon the whole bestows existence upon the part," but this is not necessary. For if by "the one who bestows existence" is meant that on which the existence of the whole depends, then the invalidity of the claim is obvious. Otherwise each part would stand in need of itself [that is, because the whole depends on the parts]. If it instead means the complete bestower of existence, which is independent in its act of bestowing existence, then the claim still doesn't follow. For sometimes, one thing may be composed out of two others, with one of these preceding the other in time, like the chair that is composed out of wood which is its matter, and the form, which comes along later. Hence, if that which bestows existence upon the whole necessarily bestowed existence upon the part, then there would follow either a delay of the effect after the complete cause [is already present], or the priority of the effect over the cause. For if that which bestows existence upon the whole already existed previously together with the earlier part, then the former would follow; otherwise the second will follow, given that this cause is the cause of the earlier part, too.[11]

[T33] Al-Abharī, *Kashf al-ḥaqāʾiq*, 48.6–20

[*solution of the "four options" paradox from T17*]

Regarding [Fakhr al-Dīn al-Rāzī's] claim that the totality of a thing's parts is identical to the thing itself, *we say*: if, by "the totality of a thing's parts," you mean the parts without the form of arrangement (*al-hayʾa al-ijtimāʿiyya*), then we do not concede that they are identical to the thing itself. For the form of arrangement too is a part of the quiddity. If, however, you mean by it all the

11 Cf. the analysis of the relationship between parts and wholes in *Metaphysics and Theology* volume, 8T58.

parts including the form of arrangement, then we admit that this is identical to the quiddity. But in that case, why can't we come to understand [a thing] on the basis of the totality of [its] parts without the form of arrangement?

You might say: the parts without the form of arrangement are *some* parts in reality, and coming to understand something by means of [understanding] some of its parts is absurd, since understanding a thing just is understanding all its parts. *But we say*: we do not admit this. For something can make the totality understood, insofar as it is the totality, without making each of its parts understood.

Then there is his claim that understanding something through an extrinsic feature would presuppose understanding that it belongs specially to the quiddity [of that thing], but this would in turn presuppose [already] understanding the quiddity. *We say*: we do not admit this. For two attributes could belong to a quiddity, and we might know that whenever one of them belongs to something specifically, then so does the other, despite our not knowing the quiddity as such. On this basis, we have a reply to his claim it is absurd to understand something through a combination of intrinsic and extrinsic features.

[T34] Al-Abharī, *Talkhīṣ al-ḥaqā'iq*, 61^{r}19–61^{v}1

[***on the same paradox***]

We do not admit that understanding something through a definition means understanding the totality of its parts [which would amount to grasping a thing through itself]. Rather, one understands an individuated quiddity (*li-l-māhiyya al-mushakhkhiṣa*) by understanding its parts, which are distinguished in the intellect. The totality of the parts distinguished in the intellect [61^{v}] is not identical to the totality of the parts of an individuated quiddity.

[T35] Al-Abharī, *Shukūk*, 11^{r}4–11^{v}1

[***on the same paradox***]

As for [al-Rāzī's argument] that understanding (*taʿrīf*) a quiddity through the totality of its parts implies understanding a thing through itself, which has already been ruled out, *we say*: what they mean by claiming that it is absurd to understand something through itself is that, if one and the same thing is signified by two expressions as corresponding [to that thing], then when asked about one of the expressions, one cannot just answer with the other [expression]. For instance, if asked "what is a human?" one cannot just answer, "a

person." But if asked "what is a human?" it is possible to respond to this [question] with an expression that combines all the singular terms that signify its parts, by saying that "human" is "rational animal," even though "human" and "rational animal" do both signify the same true reality (*ḥaqīqa*). The reason is that the thing you called "facilitator of understanding (*muʿarrifan*)" is not the complete cause through which knowledge of a quiddity arises. Rather it instills a disposition (*istiʿdād*) in the soul to receive the form that is sought, from a separate principle. So the totality of a thing's parts can allow us to understand it in the sense that they instill a disposition in the soul to receive what is sought from the separate [principles] of emanation, just as the presence of two premises in the mind instills a disposition in the soul [11^{v}] to receive the conclusion from the separate principle.

[T36] Al-Abharī, *Muntahā*, 221.11–13

[***on the same paradox***]

As for his claim that understanding something through the totality of its parts is understanding it through itself, we do not admit this. Rather one understands it as equivalent in meaning (*mafhūm*), and this kind of understanding is a detailed analysis (*tafṣīl*) of what the name vaguely signifies. By "understanding through the totality of parts" we mean nothing other than this.

[T37] Al-Abharī, *Tanzīl*, Quoted in Al-Ṭūsī, *Taʿdīl*, 157.15–17

[***solution to Meno's paradox***]

We do not admit that if a quiddity is unknown, then it is impossible to inquire into it. For it might be unknown, while there is knowledge of one of its accidents; the soul can undertake an inquiry into it by means of its awareness (*shuʿūr*) of the accidents.

[T38] Al-Kashshī, *Ḥadāʾiq al-ḥaqāʾiq*, 30^{r}9–31^{v}8

[***in defence of definitions***]

[The acquisition of definitions is possible] despite being heedlessly rejected by an eminent scholar from Khorasan in his answers to the doubts raised[12] by

12 Deleting the first *awradahā*. Note that the expression "answers to the doubts" likely does

my Shaykh, Instructor, and Master Fakhr al-Ḥaqq wa-l-Dīn al-Rāzī, may God sanctify his resting place, and make his final abode in the highest echelons of paradise, on the different ways to convey understanding (*aqsām al-taʿrīfāt*) at the beginning of his book that he called *Mulakhkhaṣ* and in other of his books, may God have mercy upon him and be pleased with him.

[***form of arrangement solution***]

The quiddity that is composed out of parts and components is not identical to those parts, whichever they may be. Rather it is those parts together with a specified, unitary form of arrangement (*hayʾa ijtimāʿiyya*) through which it is what it is. Furthermore, that composite quiddity can be referred to with a singular name that refers to it either by way of correspondence, or inclusion, or implication, as has been mentioned. That kind of reference is called "nominal inclusive reference (*dalāla ismiyya ijmāliyya*)," meaning that when the mind conceptualizes it, the mind is not turned to the conceptualization of its distinct parts in an explicit way (*mufaṣṣala*), even if the parts are conceptualized when the quiddity is conceptualized. [...]

[30^{v}2] This composite quiddity can also be referred through the name of its genus, its specific difference, and the names of its parts, explicitly and in order. That is called a definition and detailed explication of that which a name signifies inclusively (*tafṣīl mā dālla ʿalayhi al-ism bi-l-ijmāl*). In this case its parts are conceptualized explicitly in the mind. Or, the mind[13] may pass from the conceptualization of its parts, which are in a specific and determinate order, to conceiving them as a composite quiddity that is put together from them in accordance with its specific form, in keeping with the composition of those parts and their order. This way of coming to understanding is called understanding through a definition which collects the parts of a quiddity and excludes that any other parts enter into it. This is why one says that a definition must be both inclusive and exclusive.

We have already mentioned that a quiddity is not equivalent to the collection of its essential parts, whichever they may be. Rather it is equivalent to them together with a collective form of arrangement that occurs in the mind when it conceptualizes its essential features in accordance with specific composi-

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not suggest that he objected to Fakhr al-Dīn. Instead, it appears that he pushed Fakhr al-Dīn's position to an outright rejection of real definitions. The identity of this scholar from Khorasan remains a matter for further research.

13 Deleting *lā* after *aw*.

tion and concrete order, as we have mentioned. So when we make a quiddity understood through the collection of its essential features, we are not making something understood through itself, since as we have mentioned, the separate parts of something that are predicated [of that thing] are not identical to [the thing] itself.

[***relation between nominal and real definitions and aspects solution***]

When a form arises in the mind through definition, description, name, or any of the other causes of understanding, [this form] being in its meaning equal to and in correspondence with something that exists, and its generality and specificity are the same as [that of] the existent thing in extramental reality, then this is how there arises the conceptualization of that thing in its core nature (*bi-l-kunh*), in accordance with the object itself and [its] true reality. [...]

[31^{r}5] This is why it is said that definition indicates the quiddity of something only with the proviso that the conceptualization belongs to someone who knows that that thing exists. If someone does not know this, then in his case [the definition] refers only to the meaning of a name and explains what it conveys (*mafhūm*). But once the knowledge that it exists arises for him, then that very same statement comes to refer to the thing's quiddity in respect of the object itself and its true reality, so long as it is a statement that is put together from all its essential features. If it is not, then it is not [a real definition].

The conceptualization that must precede assent is conceptualization regarding the meaning of a name, and not regarding the object itself. Conceptualization regarding the object itself must come after knowledge that the thing exists, and after assent to it through a definition and explanation.[14] It is possible that the understanding (*taʿrīf*) that comes before assent is not through all the essential features, but only some of them, or through something accidental. This is the case with most conceptualizations that common folk affirm about intellect, soul, spirit, the heavens, nature, matter and other such obscure intelligibles. [...]

[31^{v}.1] If the conceptualization regarding real object comes only after one knows the thing exists and assents to it, it follows that the conceptualization of the object of inquiry must be known in some respect (*wajh*), in order that the mind can turn to it and focus on it, [but also] be unknown in another respect, in order that it can attain knowledge of it in that respect in which it was still

14 We are unable to read one word here, after *sharḥ*.

unknown. Take for instance the soul: it is known to be an entity (*amr*) that moves the body and cognizes universals, yet its substance and its spiritual features are unknown. So one turns one's focus to it insofar as it is known, and inquires into its substance and its spiritual features, because one knows all this is still unknown to one.

[T39] Al-Ṭūsī, *Talkhīṣ al-Muḥaṣṣal*, 7.6–8; 7.18–23; 8.18–9.2, 9.15–19

[***on al-Rāzī's objection to the proposed solution to Meno's paradox in T17***]

This argument is obviously sophistical. For the object of inquiry is not either of the two different aspects [i.e. one that is known and one that is unknown]. Rather, both aspects pertain to one and the same thing. One is neither wholly aware of it, nor wholly unaware of it, rather there is a third option. [...]

[***solutions to the "four options" paradox***]

[7.18] *I say:* his statement that the totality of a quiddity's parts is identical to the quiddity is incorrect. For the part is by nature prior to the whole, and if [multiple] things are prior to another, posterior thing, they cannot be identical to that posterior thing [altogether]. So [the parts] can become a quiddity when taken together as a totality, and this [the quiddity] is posterior [to the parts]. So an understanding of [the quiddity] does occur through [the parts], just as knowledge of genus, specific difference, and determining composition (*al-tarkīb al-taqyīdī*) is prior to knowledge of the genus that is determined by the specific difference: [the genus, specific difference, and composition] are the parts of [the determined genus] through which knowledge of it arises. [...]

[8.18] *I say:* the understanding of a subject of attribution depends on the attribute's giving rise to understanding, so that the mind passes over from conceptualizing [the attribute] to conceptualizing the quiddity to which it is attributed. But it does not depend on knowing that the attribute is like this [sc. uniquely tied to the quiddity], which would yield the absurdity mentioned by [al-Rāzī]. As for the fact that this attribute applies to the subject of attribution but not to anything else, this requires that the attribute is either equal [in extension] to the subject of attribution or more specific than it, for instance "capable of laughing" and "writing" for humans, respectively. In both cases it is the attribute that implies the concomitant (*malzūm*), while the subject of attribution is concomitant (*lāzim*).[15] When the concomitance is intelligible, the intellect

15 That is, in the order of knowledge, since metaphysically it is the other way round.

passes over from a conceptualization [9] of that which implies the concomitant [sc. the attribute] to the concomitant [sc. the quiddity], so that understanding (*taʿrīf*) occurs. But it is not a condition that one have knowledge of the concomitance [itself], so this absurdity [inferred by al-Rāzī] does not follow. [...]

[***against al-Rāzī's solution***]

[9.15] *I say:* we can indeed understand an explanation of the word "spirit," and can have certain knowledge of its existence in all that has spirit. Yet we find that scholars disagree about its quiddity, as [al-Rāzī] will mention himself. Neither of the two assents mentioned by [al-Rāzī] is the target of inquiry into [spirit]. Similarly, there are many things whose names we know how to explain, whose existence we perceive with the senses, and which we definitely know to exist. Despite this many people have difficulty conceptualizing them: for instance, motion, time, place, and so on.

[T40] Al-Ṭūsī, *Murāsalāt bayna l-Ṭūsī wa-l-Qūnawī,* 101.12–102.4

[***did Avicenna hold that we cannot grasp essences? cf. T8***]

As for [Avicenna's] statement [in the *Taʿlīqāt*], "reaching the true realities of things is not in the power of humans," by "things" he means concrete existents that are called "natures of existents." He mentioned this simply in order to explain the difficulty of providing definitions. He did not mean by ["things"] the true realities of intelligibles. For how could someone who has yet to reach the true reality of affirmation and negation judge it self-evidently impossible that they be combined? And how could someone who has not reached the true reality of body judge it self-evidently impossible that two bodies coincide in one location (*ḥayyiz*), or that one and the same body be at two different locations at one and the same time? If someone has not reached the true reality of ten [102] and five, how could they judge that ten is the double of five? If someone has not reached the true reality of triangle, how could they judge that its angles are equal to two right angles? In general, all certain sciences are built upon reaching the true realities of intelligibles, that is, their conceptualizations, in order to produce assents built upon these.

[T41] Al-Kātibī, *Munaṣṣaṣ*, 47r3–13

[*against al-Rāzī's nominal definition solution*]

I say: the way [al-Rāzī] intends to deal with the first doubt [i.e. the "four options paradox"] is to say: why do you say that it's impossible to understand through parts? Your argument for this would only imply that it is impossible, if our goal were to understand the true reality of what is to be understood by mentioning its parts. But this is not so. For by "coming to an understanding" we mean only a detailed analysis (*tafṣīl*) of that which is vaguely signified by the name, in other words, mentioning expressions for the parts of that which the name vaguely signifies. In some cases, knowledge may arise upon the mentioning of expressions for the parts of that which the name vaguely signifies, with the referent of name being realized either through it [i.e. just through this process of mentioning without the AI being involved], or because, upon the mention of expressions for the parts of the name's referent, the soul is disposed to receive an emanation from the Giver of Forms. There emanates upon it the true reality of the name's referent, as soon as a cause sufficient for the emanation is realized.

But the way [al-Rāzī's] intends to use this answer to deal with the second doubt [which is Meno's paradox] raises some difficulties. For the intended solution cannot [be applied] to the first option, namely that [the object of inquiry] is fully known. This is obvious. Nor can it [be applied to] either of the two other options [that is, that the object is entirely unknown, or in a sense known but in a sense unknown]. For, insofar as a detailed analysis of the referent has explanatory value by mentioning expressions for the parts of the referent, in the other two options the parts [remain] unknown: all the parts in the second option, some of them in the third option. This being so, the intended solution does not apply to any of [the three options in Meno's paradox]. [...]

[***solution to the 4 options paradox***]

[47r13] In order to solve the first doubt, *we say*: why can't one come to understand a quiddity through a totality of its parts, which includes only *some* of those parts? He claims that one knows necessarily that the totality of a quiddity's parts cannot be only some of those parts. But we do not admit this. For here, the meaning of "totality of the parts" is "totality of the *material* parts," like genus and specific difference, excluding the *formal* part, which is the form of arrangement that brings them together (*al-hay'a al-ijtimāʿiyya*). According to this account, the totality of the parts [that we use as a basis for knowing the quiddity] is only *some* of the parts from which the quiddity is composed, since the formal part too must be one of the parts.

[T42] Ibn al-Nafīs, *Sharḥ al-wurayqāt*, 246.3–5

[***accepts the two aspect solution to Meno's paradox***]

We say: the object of inquiry that we seek to know must have two aspects: one in which it is known, another in which it is unknown. One can only inquire after knowledge of it thanks to the fact that both aspects are present together, not due to either one of the two [by itself].

[T43] Al-Shahrazūrī, *Sharḥ Ḥikmat al-ishrāq*, 60.1–13

[***nominal and real definitions***]

The Master mentioned in the *Muṭāraḥāt* that the aforementioned difficulty concerning definition concerns only definition in respect of true reality. But understanding what a name signifies through the parts of the relevant meaning (*al-mafhūm*) is useful in a way closer to hand than [giving a definition] in respect of true reality, since giving true definitions is difficult, as was shown at length. Nothing like that happens with definitions in respect of the meaning: if by "human" one means "animal capable of laughter, that stands upright, possessed of a soul that can perceive universals," this is a complete definition, and there should be no objection to using it. One can't substitute for [this definition] "rational animal with broad nails and uncovered skin." For the things that were mentioned in the first [definition] were essential to the meaning and what is meant [by "human"], and there can be no substitution for the essential [constituents] of a definition, and nothing can be added or taken away. This rule about definition in respect of meaning guarantees that no mistakes arise in definition, whereas this is not the case with descriptions, since they [are given] on the basis of concomitants. The person giving a description will acknowledge that the name is not given to these predicates, but rather to thing to which the mind passes from [the description]. But with definition in respect of the meaning, one intends by the name all those attributes that are essential [constituents] in respect of the meaning, and whatever is intended [by the name]. Thus the definition in respect of the meaning is more helpful and more correct than one in respect of true reality, and it is the one towards which the most prominent theorists inclined.

[T44] Al-Samarqandī, *Qistāṣ al-afkār*, 51.3–13; 53.1–7

[*definition is just "spelling out" the meaning of term*]

Doubts concerning coming to understand: (a) if the meaning of the definition is the same as the meaning of what is defined, then [when we give a definition] we would understand something through itself. If on the other hand the two are different, how could one rightly say that the meaning and true reality of that which is defined is the meaning [of the definition]?

Response: the meaning of the definition is indeed different from the meaning of what is defined, with respect to spelling things out (*bi-l-tafṣīl*) but not with respect to the true reality. For the true reality of the definition's meaning is the same as the true reality of what is defined. The former is spelled out, though, whereas the latter is vague. So it is rightly said that the meaning of what defined is this same meaning.

(b) If the composite is nothing more than the totality of simple things, then coming to understand its quiddity would depend on understanding their quiddities. Their quiddities are unknown, though, because they can [only] be described [and not defined]. In fact, what one knows about them is only extrinsic attributes. So it follows that the composite too is known only through extrinsic attributes,[16] in which case the composite is not to be defined, but only described.

Response: "definition" just means spelling out the parts of the things that are defined, regardless whether they are known by description or in some other way. [...]

[*solution to 4 options paradox*]

[53.1] *Response*: we do not concede that coming to understand through the totality of parts is grasping something through itself. To understand something through itself would be to understand it through something that signifies the thing in just the same way as the expression used for the thing, like understanding "human" through "person," or "motion" through "transposition." But to understand something by spelling it out is not to understand it through itself in this way. Furthermore, understanding the whole does not necessarily imply that one understands the part; because one might not need to understand it [sc. it's self-evident], or one might understand it through something else. Nor does understanding an extrinsic [attribute] depend on knowing [that the attribute belongs to it] specifically. For knowing the quiddity will follow from knowing

16 Correcting *iḍāfāt* to *ṣifāt*.

[an attribute that belongs to it] specifically, even if one does not know that [it does belong] specifically. Besides, even if we admitted this, it might be enough for knowing [that it belongs] specifically that one conceptualizes the quiddity in some respect or other, like when one knows that a certain body specifically occupies a certain space, without knowing its true reality or the true reality of other things.

[T45] Al-Ḥillī, *Asrār*, 45.10–13; 46.3–5; 48.13–14; 48.16–19; 50.4–14

[***definition paradox***]

It might be said: the definition of definition is a certain definition. So, as long as one does not understand definition, one does not understand its definition [i.e. the definition of "definition"], and a vicious circle follows.

Response: being-a-definition is an accidental feature. So, as long as one does not understand definition, one does not understand the definition of definition, *insofar as it is a definition*. But so long as one does not yet know the object of attribution, one does not understand the definition insofar as it is a definition,[17] but the two aspects differ so no vicious circle follows. […]

[***defense of the aspect solution to Meno's paradox***]

[46.3] *Response*: the object of inquiry is neither the aspect that is known, nor the aspect that is unknown. Rather it is the quiddity to which both aspects are attributed. Furthermore, the soul may in the end understand the result that was the object of inquiry, because previously, an incomplete conception of it was available to [the soul].

[***on the 4 options paradox***]

[48.13] *Response*: the parts themselves, that is, the material and formal [parts], are not same as the composite. Rather they are its causes, while the composite is their effect. […]

[48.16] *As for his claim*: coming to understand something through an extrinsic feature (*al-taʿrīf al-khārijī*) depends on knowing the equal extension [of that feature to the object of inquiry], *we say*: this is a mistake. Rather, it depends on there being equal extension in fact (*fī nafs al-amr*), but does not require that we *know* this [sc. that the extensions are equal]. Hence, if it happens that

17 As the editors note, the text might be corrupted here.

someone's investigation involves an attribute that is equal in extension, and he then attains knowledge of the quiddity, it may be only at that point that he comes to know that the extensions are equal. Subsequently, if he wants to make someone else understand the quiddity, he can help them understand it through that [feature] he has understood as being equal to it in extension. [...]

[***acquiring definitions***]

[50.4] It is composition (*tarkīb*) that supplies us with definitions. One takes a number of individuals falling under a universal whose definition is a matter of inquiry, then looks for all their predicates, until reaching [predicates] that are maximally general in each case. Then, one distinguishes between essential and accidental features, as usual. Then one puts first the essential feature that is most general of all, and qualifies it with a specific difference. In this way, one composes together the essential features, with the more general among them prior to the more specific, until the last one is reached. The resulting detailed statement is the definition. If, for the general essential features, there is some name that specifically covers all of them, then it does no harm to use it. Or actually one really ought to do this, like "animal" which includes "body," "ensouled," "sensing," and "moving voluntarily."

Secret: definition cannot be had by induction (*istiqrā'*). For if by predicating of individuals one gave a definitional predication, then there would be no definition of the species, since the individuals are something beyond the species. But if one predicates of them without qualification, there will follow from this no predication that defines a species.

CHAPTER 15

Knowledge and Perception

In the history of Aristotelian epistemology, it was standardly assumed that there is a structural similarity between sensation and intellection. Of course a contrast was standardly drawn here too, most often in terms of the objects that are grasped: sensation deals with particular, material objects, whereas intellect grasps universals or immaterial intelligible paradigms. Still, the two kinds of cognition were frequently taken to be isomorphic, in that the form of the grasped object needs to arise in a subject of perception that potentially has that form. Thus the redness of a particular apple would actualize the potential redness in the eye when it is seen, while the intelligible form of apple would arise in the rational soul or intellect of someone who completes a scientific inquiry into apples. In fact this would go for all kinds of cognition or "perception (*idrāk*)," which taken in a broad sense covers not only sensation and intellect but also forms of cognition like imagination and "estimation (*wahm*)" [T56]. On the traditional account, then, perception is fundamentally passive, as it involves receiving a form from the perceived object. This will be the case whether a material, "divisible" form is received in a physical organ, or an immaterial, "indivisible" form is received in the mind [T12].

The passivity of perception is underscored by the use of the term *inṭibāʿ*, the "making of an impression" on the subject of perception, in many of the passages translated below. In [T1, T2] Avicenna uses a term with a similar force, "inscription (*irtisām*)." As al-Abharī points out, the need for an "impression" has to do with the fact that we are changed when we go from not perceiving to perceiving [T44]. When someone goes from not seeing red to seeing red, a red object has produced redness in their vision. There are different ways of thinking about taking on a form like redness, though. It is not entirely clear whether Avicenna himself wanted to say that the form itself (like redness or the quiddity of apple) arises in the perceiver, or only a representation (*mithāl*) of the form. So one task for authors in our period was to work out exactly what the impression theory amounts to.

Another, still more fundamental task was to work out whether perception should really be thought about in these passive terms. Doesn't the perceiver rather have to focus attention actively on the thing being perceived? This idea was crucial to an account of perception offered by Abū l-Barakāt al-Baghdādī, and widely accepted in the later tradition, according to which perception happens not because a form, impression, inscription, or representation arises in the

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perceiver, but because the perceiver forges a link or connection to the object of perception, so that perception is a "relational state (*ḥāl iḍāfiyya*)," this cognitive link amounting to directing attention (*iltifāt*) and active awareness (*shuʿūr*) [T5, T17, T24, T33].[1] As al-Kātibī says in [T58], this position also has various sub-options, which we'll explore below. But the debate over perception above all concerns a question often pursued in the context of defining "knowledge (*ʿilm*)," which in this context is used for all veridical perception and not only, for instance, intellection. Should knowledge be defined as the occurrence of an impressed form or representation, or as a cognitive relation between knower and known?

Early in our period Ibn al-Malāḥimī already mounted a detailed refutation of the impression theory [T3]. For starters, the soul is meant to be incorporeal in the Avicennan theory. So how can that theory describe perception as the taking on of an "impression," which sounds like a physical change? Furthermore, there were problems as to how divisible forms could be received even in a divisible thing like a sense-organ. For instance, when we see something large, like the dome of the heavens, how can we take on its enormous magnitude in something as small as the eye? This objection was often given as a basis for rejecting the impression theory [T7, T14, T23, T33, T73], despite attempts at solution, for instance by saying that the form in the eye corresponds only in shape or form, not in size. Which sounds plausible, especially if we assume that both eye and visual object are infinitely divisible, since then there can be a one-to-one match between parts [T16]. Here one might imagine the sort of optical theory put forward by Ibn al-Haytham and Avicenna himself, where a straight line connects each point on the visible object to a point on the eye or its pupil.[2] But this would still not explain how we are able to see that some things are large and others small [T73].

There was a further reason to deny that the form in the perceiver is just the same as the form in the perceived object: it is absurd to suppose that the perceiver literally acquires the properties of that which it perceives.[3] One shouldn't actually become hot when feeling heat, or become an apple when thinking about apples [T14, T18, T21]. This "becoming argument" was paired

1 This theory of perception probably goes back to *kalām*; see further F. Benevich, "Non-Reductive Theories of Sense-Perception in the Philosophy of Kalām," *Arabic Sciences and Philosophy* 34 (2024), 1–23.

2 For more on this topic and further references, see our chapter on Vision and Light in the volume on Physics and Psychology.

3 Compare the debate over "literalism" in Aristotle's theory of sensation, as famously discussed in by R. Sorabji and M. Burnyeat in M. Nussbaum and A. Rorty (eds), *Essays on Aristotle's "De anima"* (Oxford: 1992).

with another problem, the "inherence argument." This is simply the converse point, that if perceiving blackness is taking on the form of blackness, then anything that turns black should perceive blackness [T19, T20]. To respond to these two arguments, Avicenna's defenders needed to offer some distinction between the form as it arises in the perceiver, and the form as it exists in the perceived object. Merely saying that the same form arises, but with no magnitude or smaller magnitude, will not be enough.

The most straightforward solution took its cue from passages like [T1], where as we noted above, Avicenna says that the perceiver has a *representation* of that which it perceives. Just as a picture of an apple is not an apple, and a picture of fire is not hot, perceiving would not involve becoming an apple, or becoming hot, but only having a form or impression that represents apples, or heat [T38, T49]. This solution could have other advantages too. For example, it would explain why the form in the mind can be an accident even when the object of thought is a substance [T45, T74].

But a cost is being paid here: the litmus test for truth in perception was always that the form in the mind has "correspondence (*muṭābaqa*)" with the perceived object out in the world [T65]. Falsehood or ignorance will simply be the failure of one's mental forms to correspond to the extramental objects [T29, T51, T72]. Arguably, representationalism undermines this idea, for the very same reason that it offers a way out of the becoming and inherence arguments, namely that the mental representation is only a partial match with the extramental form. Several passages press this point, complaining that the "true nature" will elude the knower if the knower has only a representation and not the real form [T6, T28, T29, T34, T39, T77]. As al-Rāzī complains, truth in perception means that the form in the mind should fully share in the quiddity of what is perceived [T25].

But al-Ṭūsī is prepared to deny exactly this. He draws a distinction between the quiddity of a thing, which is what is extramentally instantiated, and the mere form of that thing [T49]. The point of this is presumably that the quiddity includes reference to the thing's matter, and it is only when both form and matter are present that properties are concretely instantiated. The distinction between forms realized in matter and forms taken on immaterially can also be invoked to solve the aforementioned "inherence argument." Blackness only makes things literally black when it is concretely existent in matter, instead of being an abstraction in the mind [T44]. Al-Ṭūsī makes another point along these lines: at least in the case of intellectual knowledge, what is taken on by the perceiver is a universal, whereas the form in the perceived object is particular [T52]. That Avicennan premise can also be used against the impression theory, though. Al-Rāzī deploys it as one part of a dilemmatic argument to show that

what receives an impression in perception could be neither corporeal (since it grasps universals, cf. [T12]) nor incorporeal (since it grasps particulars with their accidents) [T22, with rejoinder at T37].

Yet another line of attack on the impression theory was to mention perceptions of things that don't seem to have forms suitable for impressing in the perceiver. An obvious example here would be non-existent or impossible entities [T3, T76]. How can something that does not exist make an impression on a perceiver, or for that matter be accurately represented by a perceiver? Another case would be God, since He has no form, though this is not a problem as long as we are prepared to admit that He is unknowable [T15].[4]

While Avicenna in some passages looks to be endorsing representationalism, he elsewhere offers what sounds like a very different model of perception: "unification (*ittiḥad*)" between the subject and object of perception. Al-Rāzī thinks this might solve the inherence problem. Whereas the subject of perception would "become one" with, and thus simply *be* blackness when blackness is perceived, this is not true of a wall that is painted black [T26]. Al-Rāzī is, however, puzzled how the "unification" idea could fit with Avicenna's other remarks on knowledge. He may be thinking of a passage from *Pointers and Reminders* which mocks Porphyry for saying that intellect unifies with the intelligible; al-Suhrawardī mentions that passage explicitly [T32].[5] In any case al-Rāzī himself rejects the unification account on the grounds that it would be impossible to grasp more than one thing at a time [T27]. A surprising line of defense comes from al-Shahrazūrī, who alleges that Avicenna's talk of "unification" was meant to capture something quite different from normal knowledge, namely Sufi mystical insight [T69]. But even here the knowing subject does not become fully identical with its object.

Let us now return to the most historically significant critic of Avicennan representationalism: Abū l-Barakāt [T7]. We've already seen that correspondence between the mental representation and the extramental object can only ever be incomplete. But never mind that: how would the knower ever be able to verify that their representation in fact represents the object *at all*? Al-Ṭūsī offers a remarkable response to this, which is to endorse an externalist view of knowledge: it is enough that the representation does in fact correspond in the relevant way, and one doesn't need to be sure that it corresponds [T54] (a sim-

4 For more on knowledge of impossible things see our chapter on Non-Existence and Mental Existence and in our volume on Metaphysics and Theology.

5 For translation and discussion see the appendix in P. Adamson, "*Porphyrius Arabus* on Nature and Art: 463F Smith in Context," in G. Karamanolis and A. Sheppard (eds), *Studies on Porphyry* (London: 2007), 141–163.

ilar point is made by al-Samarqandī in [T60]: we need not be aware of how our sense-perception works). But Abū l-Barakāt would surely reject this, holding on to the internalist intuition that one needs to know that one's knowledge is in fact accurate. Since the representationalist view cannot satisfy this requirement, and since the passive "impression" account is in any case subject to the other objections we have been discussing, we should give up on that account completely and try something else.

Abū l-Barakāt's alternative proposal is that the soul actively grasps, or "arrives at," its object [T8, T9, T10, T11, T13].[6] (One verb he uses for this, *waṣala*, meaning "to get at something," is later used by al-Samarqandī to express the same idea [T59, T62].) In a case of sensory perception, like vision, the soul uses bodily organs and the images they receive as instruments for its acts of grasping. But it is always the soul, never the organ, that is the subject of perception, and perception is a direct relationship between the soul and the perceived object.[7] Other thinkers were fascinated by this account and saw it as the main rival to Avicenna's. Several offered helpful summaries and critical evaluations [T16, T17, T71], with al-Sāwī for one arguing that Abū l-Barakāt will be in an even worse position to handle some of the puzzles he himself aimed at Avicenna. The anonymous author of *al-Nukat wa-l-fawā'id* is also unimpressed [T43]. He recalls examples given by Avicenna, like the spinning torch that is seen as a luminous circle, to show that we are directly perceiving internal images, and grasp external things only by means of those images. As more recent philosophers have had to re-learn, representationalism does very well at handling such illusion cases, but is always liable to skeptical worries of the kind raised by Abū l-Barakāt.

Fakhr al-Dīn can be seen as a proponent of Abū l-Barakāt's relation theory. One advantage of defining knowledge as a relation, he thinks, is that it can stand up against the sort of skeptical worries just mentioned [T28]. He does however realize that there are other potential difficulties with it, notably that we often seem to have knowledge in cases where there is nothing to which we might be related [T31]. This objection is also pressed by opponents of the relation view [T35, T51, T57, T66]. But as we saw, this problem also faces the impression theory. Non-existent objects seem incapable of producing an impression or mental form, and also unsuitable as targets of a relation. So this

6 On Abū l-Barakāt's theory of perception see further F. Benevich, "Perceiving Things in Themselves: Abū l-Barakāt al-Baġdādī's Critique of Representationalism," *Arabic Sciences and Philosophy* (2020), 229–264.

7 This connects to Abū l-Barakāt's rejection of multiple faculties of perception in the soul, on which see our chapter on the Unity of Soul in our volume on Physics and Psychology.

looks to be a difficulty for everyone. One solution, mentioned by al-Ḥillī, is to put the known objects not among existent things in extramental reality, but in the realm of *nafs al-amr*, that is, factual states of affairs.[8] But al-Rāzī goes for a rather more fanciful, if easier to understand, solution, namely that the relata are out there after all. It's just that they are "hidden" somewhere, or are perhaps Platonic Forms [T29, T30, rejoinder at T78].[9]

This brings us to what is probably the most famous account of cognition in our period, namely al-Suhrawardī's celebrated theory of knowledge as "presence (*ḥuḍūr*)." Against the background of the debate just sketched, this theory turns out to look much less revolutionary than is often supposed. Basically it amounts to a rephrasing of Abū l-Barakāt's view: perception or knowledge is a direct relation or "connection (*taʿalluq*)" between the subject and object, such that the object is "present to" the subject. Thus for example in vision, perception occurs simply because the visible object shows itself to an attentive observer, with no representative form needed [T33; rejoinder at T46]. As al-Suhrawardī and others influenced by him like to say, it suffices that the object not be "hidden" from the perceiver [T64]. This explains why we are able to engage in self-awareness, or awareness of our own bodies: we are always present to ourselves [T48].

In fact Ibn al-Malāḥimī had already noted the difficulty of accommodating self-knowledge within the Avicennan theory that knowledge occurs through impressions: it seems absurd to say that one is passively impressed by one's own form [T4].[10] Al-Abharī tries to fix the problem by admitting that self-knowledge is different from other cases of knowledge. For him, intellectual knowledge falls into two types, one directed towards oneself and another towards other things: the former is like Suhrawardian knowledge by presence, the latter is not. And, a point in favor of al-Suhrawardī: both kinds of knowledge at least have in common that a quiddity is present to the knower without corporeal attachments [T47]. In sharp contrast is the epistemology found in Bābā Afḍal, who assimilates *all* knowledge to self-knowledge. He thinks that we can turn towards our selves to find knowledge of everything [T40]. This is because the "Intellect" which knows all things through itself has all things within its existence,[11] and

8 On the notion of *nafs al-amr* see H. Spiker, *Things as They Are: Nafs al-Amr and the Metaphysical Foundations of Objective Truth* (La Vergne: 2021).

9 Again, see our chapter on Non-Existence and Mental Existence in our volume on Metaphysics and Theology, esp. T33.

10 See further our chapter on Self-Knowledge in the present volume.

11 This Intellect is presumably God, not a second principle below God, as in classical Neoplatonism; see Bābā Afḍal's account of God as that which knows through itself in our chapter on Proofs of God's Existence (Metaphysics and Theology), T50.

knowledge is finding the "traces" of that intellectual existence within our souls [T41, T42]. Notice that Bābā Afḍal's account would avoid the skeptical worries that plague representationalism, as we have mentioned above. The mind can be sure that its knowledge is veridical, because it is just grasping itself.[12]

But the Suhrawardian theory does accept a distinction between knowledge of the self and of other things, which are "present" in different ways. Regarding things other than oneself, the Illuminationists point out that it is not only the perceived object can be "present" to us, but also the form of that object, for instance if we imagine something we saw in the past but is no longer there [T33, T68]. Here representationalism is used to fill a gap in the presence theory, since it allows us to explain cases of cognition directed at absent things. Ibn Kammūna also says that presence comes in degrees, with vision for instance involving a stronger "unveiling" than imagination [T67]. Despite all this language of presence, hiddenness, veiling, and so on, talking of knowledge as presence did not seem to have any particular mystical significance in al-Suhrawardī himself. A mystical interpretation of "presence" is however prominent in the Illuminationists he influenced, like al-Shahrazūrī [T70].

Although the ideas of presence and non-hiddenness are the most celebrated elements of al-Suhrawardī's theory of knowledge, a careful reader may notice that for al-Suhrawardī, something more than "non-hiddenness" is required if perception is to occur. In addition, the perceiver must focus sufficient "attention" on the object, which otherwise may not be registered [T33]. Fakhr al-Dīn likewise emphasizes the need for purposeful attention if perception or knowledge is to arise [T30]. Again, we see that a theory inspired by Abū l-Barakāt conceives of perception as having an "active" aspect, a point that was arguably missing in Avicenna. For instance, al-Ṭūsī characteristically accepts some Suhrawardian elements of the theory of perception, such as allowing that *some* cases of knowledge, like self-knowledge, do not need a form, while others do [T55]. Yet he still seems to reject the idea that we need a separate element of conscious attention to be involved [T50]. Hence, he faces a worry raised by the Avicennan picture, which is that in cases of sensory perception not one but *two* forms will arise, one in the sense-organ, another in the soul which grasps what the organ is perceiving. In fact though, there is no "double perception," since perception happens only when the form is present to the soul, not just to the sense-organ [T50, T53]. Al-Ḥillī objects however that this is not really compatible with the Avicennan theory, since the perception is no longer the

12 This may be compared to Plotinus' argument against Platonists who believed that the objects of intellect are outside the intellect, at *Enneads* 5.5.1.

occurrence of a form in the perceiver (which is the immaterial soul itself), but the occurrence of the form in something else (the organ) [T75]. On this telling, al-Ṭūsī effectively ended up abandoning Avicenna's inherence-based account of perception.

We might more charitably say that al-Ṭūsī typifies thirteenth century approaches to our topic, which often combine elements from originally disparate perceptual theories. We can see this by charting the history of another proposal, inspired by the *kalām* tradition, namely that perception is an "attribute (*ṣifa*)" in the perceiver, also mentioned in the doxography at [T58]. Al-Āmidī introduces this as a third option alongside the impression and relation options [T36]. We also find, for instance, al-Samarqandī calling perception an "attribute" [T61]. But there is an obvious question here, as to how my attribute of knowledge or perception allows me to know some specific object. A natural thought would be that the attribute is itself related to that object. In fact al-Āmidī also speaks of knowledge as a "relational attribute" [T35], while al-Samarqandī and al-Urmawī say that knowledge is in itself a quality, but one that involves a relation to something else [T62, T63]. Another syncratic proposal, which appropriately enough is found in the final passage we provide, is made by al-Ḥillī: perception is the presence of a form in the perceiver, which is "equivalent to" and thus in relation with a perceived object [T79].

Texts from: Avicenna, Ibn al-Malāḥimī, Abū l-Barakāt al-Baghdādī, al-Shahrastānī, al-Sāwī, al-Masʿūdī, Fakhr al-Dīn al-Rāzī, al-Suhrawardī, al-Āmidī, Bābā Afḍal, Anonymous: *al-Nukat wa-l-fawāʾid*, al-Abharī, al-Ṭūsī, al-Kātibī, al-Samarqandī, al-Urmawī, Ibn Kammūna, al-Shahrazūrī, al-Tustarī, al-Ḥillī.

[T1] Avicenna, *Ishārāt*, 237.8–238.7

[***perception as representation***]

The perception (*idrāk*) of something is when its true reality is represented (*mutamaththila*) by the perceiver, and is observed through that by which he perceives. This true reality may be the true reality of something external to the perceiver itself, when it is perceived, where it is the true reality of something that lacks actual existence in extramental concrete individuals, as with many geometrical figures, and especially many impossible things that are posited but never actually realized, as one posits them in geometry. Or, the remaining option: it may be a representation (*mithāl*) of its true reality, inscribed (*murtasiman*) in the essence of the perceiver, without being separate from it.

[*types of perception*]

A thing is an object of sense-perception (*maḥsūsan*) when it is observed. Then, it becomes an object of the imagination (*mutakhayyalan*) after it is absent, by having its form represented inwardly, as when you see Zayd, for instance, but then when he is absent from you, you imagine him. Then he is an object of intellect (*maʿqūl*) when on the basis of Zayd, for instance, the idea (*maʿnā*) of human is conceptualized, which also exists for other [humans]. When he is an object of sense-perception, he is covered up with things extraneous to his quiddity (*māhiyya*) which, when eliminated, have no impact on the identity of the core of his quiddity (*kunh mahiyyatihi … bi-ʿaynihi*), for instance location, position, quality, and size. If one supposed them to be exchanged for others, this would have no impact on the true nature (*ḥaqīqa*) of the quiddity of his humanity.

[T2] Avicenna, *Ishārāt*, 244.8–15

[*inscribing of forms equals awareness of forms*]

You should know that it will be explained to you that that in us which is inscribed (*murtasim*) with the intelligible form is incorporeal, and is not in a body, whereas that which is inscribed with a form prior to it is a power in the body, or a body. And you know that the power's awareness (*shuʿūr*) of that which it perceives is the inscribing (*irtisām*) of [the object's] form in it, and that when the form arises (*ḥāsila*) in the power, the power is not unaware of [that form]. Do you suppose that, when the power is unaware of [the form], and then it turns back to it and directs attention (*iltafat*) to it, that it happens through anything other than the origination of its representation in [the power]? Thus it must be that the form eluding its awareness is the [form] that in some sense vanishes (*zālat*) from the perceiving power.

[T3] Ibn Al-Malāḥimī, *Tuḥfa*, 72.21–73.2; 73.18–9; 74.1–7; 74.13–16; 74.20–75.12; 76.1–6; 76.16–17; 77.3–9

[*the philosophers' theory of knowledge as impression, with criticisms*]

Concerning the true reality of intellect and knowledge, they [sc. the philosophers] said that it is something existent that is free from matter. They said the knower is the existent who is free from matter, while the object of knowledge and intellection is separated from matter. They explained this by saying

that, when we posit the inherence of something that has been separated in that which is free [from matter], [73] then what inheres is knowledge, while the subject of inherence is the knower. For "knowledge" means simply that the impression (*inṭibāʿ*) of a form that has been separated from matter into an entity that is free from matter. That which is impressed is the object of knowledge, while that onto which it is impressed is the knower. This is just what "knowledge" means. [...]

[73.18] *We say*: what we understand by "knowledge" is for one of us to have clarity (*tabayyun*) about something, and for it to be evident (*ẓuhūr*) to him, in such a way that he can rule out the possibility (*tajwīz*) of what differs from it.

[74.1] *They said*: knowledge is perception (*idrāk*) through an internal sense, just as sense-perception of an object of sensation is perception through an external sense. Furthermore, the external sense is nothing but the impression of the form of the sensory representation (*inṭibāʿ ṣūrat al-mathal al-maḥsūs*) into the [organ] of sensation, which perceives and senses only the trace (*athar*) that is impressed in it. The external thing corresponds to this and is the reason for the occurrence of the trace. It [sc. the external thing] is the perceived object only secondarily, not primarily. You have an encounter with whatever occurs in your soul, and this trace is just what sensation is. Likewise, perception through an internal sense must be the impression of a representation of the thing that is known in the soul. The external existent corresponds to it and is the reason for its occurrence in the soul. Yet in reality the object of knowledge is that form which occurs in the soul. [...]

[74.13] *One may say to them*: what do they mean by the soul in which the form of the external object of knowledge is impressed? Do they mean the heart and its structure (*binya*), or rather the soul that is impressed [in the body], which is affirmed by the philosophers (*falāsifa*)? If they do mean the heart, *one may say to them*: there is a dense veil between the heart and the external object of knowledge which hinders the object's from being represented in the heart, just as a dense veil hinders the form of an external object of sensation from being represented in the sense-organ. [...]

[74.20] The same result will be forced upon them if they say that soul is not the heart, but rather a substance impressed in the heart, through which one is connected to the world of the soul, in keeping with the teaching of Plato. But if by "soul" they mean that which other philosophers taught, namely that it is a substance existing neither in a body nor in a place (*jiha*), according

to the doctrine of Aristotle and later philosophers such as Avicenna, among others, *one may say to them*: this is based [75] on your argument for affirming that soul, which we reject. We will show the falsehood of [their] argument [for the Aristotelian account of soul] in what follows, if God wills. *One may also say*: even if we conceded that [theory of] soul, we might say to you, we have no intellectual grasp of the occurrence of the form of an object of knowledge in something that is neither in a body nor in a place. For our saying "such-and-such occurred in such-and-such" means just that the former occurred "where" (*khaythu*) the latter did, being subsequent to it by occurring "where" the latter is. This can be grasped intellectually only for something that has a "where" in which it may itself occur. Only then will it be possible to say that something else occurred in the place where it is, being subsequent to it. [...] [75.7] But if soul is not a body, it does not occur in any place, and we cannot intellectually grasp that a trace of something should be in it. Don't you see that, when you say "the form of the external object of thought occurs in the soul," if someone replied that instead the soul occurs in the form of the external object of thought that has been separated from matter, you would have no response? You would not be able to distinguish between the occurrence of the soul in the form and the occurrence of the form in the soul, because just as the soul is not in a place, neither is the form impressed in the soul. If neither of them is in a place, one cannot say that it is more appropriate for either one to be in the other, rather than vice-versa.

[76.1] Next, *one may say to them*: we have shown in the *Mu'tamad*, in the chapter on vision, that sense-perception is not an effect (*ta'thīr*) of the perceived in the sense-organ. Rather the effect of the perceived object in it is the *condition* for sense-perception. We have proved this on the following grounds. Suppose someone else speaks to us and we hear what he says, so that the sound made does have an effect on our organ of hearing. If the effect of the sound in the organ of hearing were identical to our hearing what he says, then our hearing him talk would arise from the person speaking to us, since it would be him who brings into existence that which affects the organ of hearing. Yet every reasonable person knows that hearing him talk arises from the one who hears, not the one who speaks. So we know that our hearing (*samāʿ*) [what he says] is something beyond (*zā'id*) making us hear (*ismāʿ*) him: it arises from the one who hears, and is rendered necessary by the listener's being alive, through an instrument, namely his organ [of hearing]. That is why a speaker can be neither ordered nor prohibited from making Zayd listen to him. Nor is [the speaker] praised or blamed for it. So we know that the hearing of speech is something

additional (*zāʾid*) to the effect of sound in our sense-organ. If it must be so in the case of the perception of sound, all other types of sense perception work in the same way. […] [76.16] The same may be inferred concerning knowledge about the external object of knowledge: it would be something beyond the occurrence of its form in the soul, even if we were to concede that its form is in fact impressed in the soul, just as we have mentioned in the case of external sense-perception.

[77.3] *One may say to them*: someone who grasps with the intellect may freely conceptualize things that do not exist in concrete individuals, like the goat-stag. Likewise every artisan, builder, or scribe conceptualizes what he will make before bringing it into existence. The essence of that which does not exist, though, cannot be conceptualized in the soul, since it has no essence. So one may rightly say that the soul is what conceives of these things on the basis of other things, but without them being the effects of other things. And its conception of them is knowledge about them, as we have mentioned. Likewise, the soul must produce the perception of all external objects of knowledge through acts of knowledge (*bi-l-ʿulūm*), without there being any external knowledge to make knowledge in [the soul] as an effect. By contrast this is not so with external sense-perception. Hence your analogy fails. Also, since we conceptualize the denial of things whose existence is impossible, as when we conceive another thing resembling the necessary existent, and deny it. One cannot in such a case say that its essence is impressed in the soul. There are many such cases one might discover by inquiry.

[T4] Ibn al-Malāḥimī, *Tuḥfa*, 77.15—22

[***self-awareness as counterexample to knowledge as impression***]

Furthermore, you said several times that if a person knows himself, his knowledge is precisely because he is not hidden from himself, and needs no representation or form to occur in him, in order to know himself. […] [77.18] But initially, you said: whenever something free from matter is impressed upon something else free from matter, what is impressed is knowledge, and that in which it is impressed is the knower, and "knowledge" has no other meaning than this. How do these two different ideas amount to the same thing? The problem is obvious, because you made that in which the form of an external object of knowledge is impressed to be a self-knower; but you made the knower to be knowledgeable purely on the grounds of his being separate from matter. Then elsewhere, you made him to be knowledgeable due to the impression of

a form that has been separated from matter in something free [from matter]. This is a contradiction, unless one takes "knowledge" and "knowledgeable" to be equivocal notions, but they don't say this.

[T5] Abū l-Barakāt, *Muʿtabar*, vol. 2, 323.14–15

[***perception as relation***]

We say: upon even slight reflection, one will realize that perception of whatever sort is primarily and essentially a relational state (*ḥāl iḍāfiyya*) between the perceiving thing and the perceived thing.

[T6] Abū l-Barakāt, *Muʿtabar*, vol. 2, 324.18–325.13

[***representational cognition would not grasp the object itself***]

It is said concerning each of these perceptions that their perceiver "encounters" (*yulāqā*) the perceived object, and "communicates (*yushāfihu*)" with it. Common to [all accounts of perception] is speaking of an encounter (*laqāʾ*) between the perceiver and the perceived, and their coming together, either at the perceiver's end or at the perceived. Yet they have explained vision with reference to the way colored shapes are engraved upon surfaces, bodies, and mirrors, and how qualities, such as heat and cold, migrate by relocating from some bodies to others. Regarding mental perceptions and imaginative representations, they claimed that these [amount to] forming representations and representing figures (*ashbāḥ*) in specific organs, namely [325] the spirits which bear the faculties [of the soul]. But they made an exception among these perceptions when it came to what they called "intellectual perception." It does not belong specifically to any organ, nor does it require any organ. Whatever the perceiver encounters among [intelligibles], he perceives through himself (*bi-dhātihi*), and makes it occur in himself (*fī dhātihī*). [...]

[325.9] According to these views, what is perceived (especially in the case of mental perceptions) primarily and essentially is not that which is said to be perceived because its meaning (*maʿnā*) and representation has been imprinted [in the perceiver]. Rather, [the primary object of perception] must be the meaning and the representation. It has not been verified how the possessor of the meaning is perceived through [the representation], or actually, it hasn't been verified [that this happens at all]. If we introspect upon our own minds, what we will find to be correct is this general occurrence that perception is achieved

and realized through the encounter between the perceiver himself and object itself (*laqāʾ al-dhāt al-mudrik li-l-dhāt allātī tadrukuhu*).

[T7] Abū l-Barakāt, *Muʿtabar*, vol. 2, 327.23–328.1

[***magnitude argument***]

The decisive proof against those who believe in figures (*ashbāḥ*) that arrive [at the eyes] is for us to say: how can the pupil of the eye, or the spirit in it, hold the impression of the form of the heavens in correspondence to its size and magnitude, despite [328] being so much smaller than it? How can a large form be impressed in something small?

[T8] Abū l-Barākāt, *Muʿtabar*, vol. 2, 333.13–334.1

[***it is the soul that sees through the eye and visual ray***]

What sees in the person is his soul. It is his essence, of which he has awareness, with no misgiving that anyone else might be seeing, despite doing so through the eye. And it is [the soul] that hears, despite doing so through the ear. And so on with other acts, as no one doubts that he is the one who performs each of them. So it is established that he is the one who sees and hears, no one else. Nor is the one who sees in [the person] distinct from the one who hears, even as he sees each thing in its place and size, not a representation of it (*mithālahu*) within his brain. If he saw something within his brain, then he should really see the inside of his brain, in which he is seeing. He doesn't even see the eye, so how could he see what lies behind it? Rather one just sees *through* the eye, so that the one seeing is not the eye. If it were, then the eye would rather see itself. This [seeing] is achieved through the light of the eye and its sending out of rays (*shiʿāʿ*) that reach the visual object. If [the ray] does not reach the object, the person will not see it. This ray is like the eye in that it is an instrument for that in us which sees. [The ray] is not what sees. Rather, by means of it we see that which it reaches. Our perception arrives at (*yantahī*) [the visual object] without our souls separating from our bodies. Rather each of us is aware of the soul in his body and together with [the body] in the appropriate way. The [soul's] perception reaches the visual object where [334] it is and arrives at it.

[T9] Abū l-Barakāt, *Muʿtabar*, vol. 2, 348.19–20

[*soul does not need the body to grasp sensible things*]

With each act, [the soul] turns its attention to whatever is individually specifically selected by the organ, not because it could not [perceive them] through itself and by its nature (*fiṭra*), but because of its being connected [to the body] through character, inspiration, or custom.

[T10] Abū l-Barakāt, *Muʿtabar*, vol. 2, 394.8–17

[*linguistic analysis of* idrāk]

The lexicographic definition of "reaching/perception (*idrāk*)" is, as stated above, that someone who is searching and looking for something he is after comes upon it and gets hold of it. One may say that he "reached (*adrakuhū*)" it if he walks to it and catches up with it. Here it is characteristic that the thing was escaping him, but then the seeker follows it and gets hold of it. More generally, it is said of attaining and getting hold of something after looking and searching for it, as when two people are looking for one another and then they meet on purpose, this is called an "encounter (*talāqiyan*)," with each of the two having gotten at (*waṣala*) the other; but if they did not meet on purpose it is called a "chance encounter." Either way it is called "reaching" and "attainment." Thus *idrāk* is the encounter and arrival of someone who reaches something, at what is reached. "Understanding (*fahm*)" is said to be "reaching/perception (*idrāk*)" too, as when one says "the perception of this word's meaning," that is, understanding or conceptualization of it. Of reaching/perception there is the existential variety, which arises through bodily motion, and the mental variety, which happens through the soul's looking for something without any motion in respect of place. Both are an encounter of the perceiver with the perceived, essence to essence (*al-dhāt li-l-dhāt*).

[T11] Abū l-Barakāt, *Muʿtabar*, vol. 2, 396.5–14; 397.17–398.3

[*two kinds of perception*]

There are two kinds of perception. One is the perception of a concrete existent just as it is in existence, in terms of place, proximity to or distance from the perceiver, what is next to it, far from it, facing it, above or below it, precisely as these things are perceived by the eye, where they are and with those attributes. If we cover our eyes, we do not perceive this thing as being as such-and-such.

But if there is someone else in the same place, he will obviously share with the first person in perceiving the perceived object in the same way, as long as there is nothing which obstructs only the second but not the first, like a blindfold, he doesn't direct his attention (*iltifāt*) to some other spot than where the object is located, so that he's distracted away from it, taking his attention away from being aware of that which he perceives.

The other is the perception of a mental form, which the perceiver realizes has no specific place, and is established in no location. For instance, one might conceptualize the form of an individual who is dead, or is hidden or distant from the location [the perceiver] can apprehend and perceive. [...]

[397.16] *Someone might say*: the benefit [of their doctrine] is that a corporeal power is the subject of inherence (*maḥall*) and substrate (*mawḍūʿ*) [for the perceived forms], and that this consideration takes place in it, that is, in the subject. This statement is wrong, for the reasons we've given. Namely that the spirit and human body do not suffice for [such a consideration of forms], not even a tiny, minimal part of them. Yet we know that we do perceive [such forms], without this occurring inside our bodies or outside them—not in our bodies, and not in any part of them. They belong to us in such a way that the eye does not apprehend them: neither one of our eyes, nor the eye of [anyone else] who sees. Rather [the forms] are in our souls, which are their subject of inherence, just as with other objects of knowledge, which we have distinguished into those intellectual universals and these sensible particulars. The sensible is nothing other than what we have already mentioned; the intellectual is nothing but the mental item we are discussing now. For if something mental is called "intellectual," meaning the universal that has no concrete measure or concrete place of its own, then this case is just the same. The soul is the subject of inherence for all the forms that are known, because it is through this thing of ours, in us, and with us, that we are aware, so that [398] we are aware through this, finding in this case [sc. universals] no difference that we can perceive in itself, and they have offered us no proof [that the two cases are different]. So there is no difference between [sense-perception and perception of universals] as concerns that which perceives both. The subject that stores and turns its attention to both of them is each one of us in themselves (*dhāt*).

[T12] Abū l-Barakāt, *Muʿtabar*, vol. 2, 403.6–8

[***summary of Avicenna's indivisibility argument***]

They said that the indivisible does not inhere in that which receives division, nor can the form of that which receives division inhere in the indivisible. On this basis they ruled out that the perceiver of the intelligible form is the same as the perceiver of sensibles.

[T13] Abū l-Barakāt, *Muʿtabar*, vol. 2, 413.11–15; 416.6–10

[***how do we have knowledge of particulars?***]

They claimed that intellect does not perceive sensible things and they believed that, if intellect were to perceive sensibles that have sizes and shapes, and are susceptible to separation and division, then intellect [too] would have to be divided along with them. For its essence would encounter their essences through its perception of them, and each of their parts would encounter a bit of the [intellect], which another of their parts does not encounter. So it would be divided through encounters with the different parts. But if the intellect were subject to division and partition, then it could not perceive intelligible forms, which are not subject to division and partition. […]

[416.6] It has been verified, and repeatedly stated in different and similar ways, that what perceives intelligibles is the same as what we have that perceives sensibles, and what perceives concrete existents is the same as what perceives mental objects within ourselves. It is not subject to partition through sensible forms, nor is it divided, so that what it perceives would be divided in accordance to its division. And there inhere in it intelligible forms, which they say to be immune to partition.

[T14] Abū l-Barakāt, *Muʿtabar*, vol. 2, 341.4–18

[***incommensurability argument and becoming argument***]

We say the same about [the common sense] as we said about visual perception. There, one has denied that the shapes of anything having large dimensions would be inscribed (*irtisām*) [in the eye pupil] beholding its dimensions. So, how can thousands of such dimensions be inscribed in this small part [of the brain], how can a town be engraved (*tantaqishu*) [in the brain] beholding its measure, or a mountain beholding its largeness? Given that it was impossible

in the case of an eye when it was seeing shape by shape, one after another, it is all the more impossible here, in the case of the perception of many different objects at the same time. How can different types of perceived objects such as colors, shapes, hotness and coldness, hardness and softness, [different] types of taste and smell be altogether? How does one move in shortest time from the perception of something to perceiving its opposite?

Also, if one's perception is the occurrence (*ḥuṣūl*) of those qualities in him, and the hot is that one in which there is hotness, and the cold is that in which there is coldness, and the hard is that in which there is hardness, and so on, then that spirit [which they claim to be the bearer of common sense] hardens as stone, softens as air, becomes wet as water, becomes dry as earth, burns as fire, and becomes cold as snow in the shortest time period. Likewise it becomes sweet as honey and bitter as cactus, and [changes] in terms of these states from one opposite to another [almost] without any time distance.

[T15] Al-Shahrastānī, *Muṣāraʿa*, 74.2–5 [trans. Mayer, mod.]

[*if knowledge is an impression, one cannot conceive of God*]

Those companions deny that He is an object or subject of intellection. For intellection is the inscribing (*irtisām*) of the intellect with the form of what is intellectually grasped, but the True is exalted above having form and so being intellectually grasped, regardless whether the form is corporeal or an incorporeal quiddity. He is exalted above intellection, such that there would be both Him *and* a form. Rather, He is beyond knowing and being known!

[T16] Al-Sāwī, *Nahj al-taqdīs*, 137.13–138.3; 139.7–140.9; 141.6–12; 142.3–6; 143.1–8; 144.4–10; 145.9–13

[*summary of Abū l-Barakāt's view*]

All perceptions belong to the soul alone. There is no visual faculty in the eye, nor hearing faculty in the ear, nor smelling faculty in the nose, nor tasting faculty in the tongue, nor touching faculty in the whole body of man, which would distinguish between cold and hot, wet and dry, hard and soft, rough and smooth. Rather, all these perceptions belong to the soul itself (*bi-dhātihi*). [138] Likewise the inner perceptions involving the work of imagination, thought, estimation, and memory all belong to the soul. *He said*: if the soul turns its attention (*iltifāt*) to the spirit in the two hollow nerves of the eye, and the light

of vision[13] falls upon an illuminated object that is facing it, then there arises a perception of the object of vision, which belongs primarily and essentially to the soul. […]

[***arguments in favor of Abū l-Barakāt's view***]

[139.7] *The first* [argument] is that if vision took place through the making of an impression (*inṭibāʿ*), then something will be impressed upon the surface of the cornea, which is larger than it in magnitude. And we can see half of the heavenly sphere, or some say even more than half. *The second* [argument] is that we see things as being where they are. If vision were the impressing of figures (*ashbāḥ*) in sight, then we could only see or sense them as being in the eye, and we should not ever sense nearness and farness. *The third* [argument] is that every reasonable person who is capable of intelligent speech knows from his own experience that he is the one who sees, hears, imagines, uses estimation, and remembers, no one else. But if perception happened through these faculties, it would be false to ascribe these perceptions to him, saying: "I have seen, I have heard, I have tasted, and I have smelled." Rather it would be true to say: "my eye has seen, my ear has heard." […]

[***responses***]

[140.5] *As for the third*[14] among these objections [posed by Abū l-Barakāt against Avicenna], it does not really prove the reverse of the true doctrine. For, even though particular perceptions happen through organs and corporeal faculties, the soul is nonetheless aware of them. If a visual form arises in vision and is impressed upon it, then awareness of it occurs to our souls. Whatever the faculty perceived in a particular way is transmitted from the faculty to [the soul] in a universal way. That is why every reasonable person knows from his own experience that he is the one who sees and hears. […]

[141.6] If the soul's perception were not mediated by organs and powers which are impressed in them, then the relations we have mentioned would be impossible, and it would be necessary, or nearly so, that this sense-perception through these faculties would arise for *everything* else, so that whenever someone directs his thought to [anything at all] even a little bit, he would doubtless perceive it. But clearly perception of food occurs through saturation of the tongue and the tongue's taking on the qualities of each bit of food, so that they are

13 The "light of vision" here is a visual ray sent out from the eye, which allows us to see any illuminated surface.

14 In the text it says "first argument" but this is clearly a response to the third one.

perceived by the powers that flow through the nerves dispersed through the surface of tongue. Likewise the human being takes on the qualities of hot, cold, and other objects of touch, but this does not happen to the separate substance, which can be neither hot nor cold, wet nor dry, rough nor smooth, hard nor soft.

[142.3] *The response to* [*the second argument*] is that, just as the figures (*ashbāḥ*) of things are impressed upon vision, so the distance between it and the visible object are impressed too, through the intermediary of the colored image. For among sensible objects, there are some that are sensed without an intermediary, others that are sensed with an intermediary, like magnitudes, positions, motions, cases of rest, shapes, nearness, farness, and juxtaposition. Their being "sensed with an intermediary" means that their being inscribed and imagined follows upon that which is sensed primarily and without an intermediary, like color, hot, and cold, so that their representations can be inscribed upon imagination and sense only with these attachments and necessary concomitants [sc. magnitudes, positions, etc.].

[143.1] Actually, these cases are even more problematic and difficult [for the one who says that the soul perceives by itself], since soul cannot reach that sense-object where it is, so as to perceive it as being there, since it cannot reach sense-objects. It cannot in itself perceive [the object] there, the way it perceives universals. For it perceives universals without connecting or linking them with anything sensible. In fact, the problem is even worse for him than that, since the eye is a body in a location, and there is some interval of distance between it and the sense-objects, so it is possible for the distance to be inscribed in it also, following upon the colored [image], as we have mentioned. The soul, by contrast, is not corporeal, nor is it in a location, nor is there any distance between it and corporeal things. So how does it sense the distance between sight and its object?

[144.4] [*Response to the first objection.*] *We say*: if someone comprehends the knowledge of the infinite division of bodies, and [realizes] that [even] a small body can be divided into fractions of number or shape, and if each fraction differs from the others in magnitude, then it is not so implausible [that a large body can make an impression in the much smaller eye]. In general, [Abū l-Barakāt's] doctrine is harder to credit: doesn't he say that this perception occurs in the soul, that is, the perception of this particular thing which is half of the cosmic sphere, [perceiving it] as an individual whose magnitude is spread across different locations, whereas the soul has no magnitude? If this large object can be inscribed upon something that has no magnitude [sc. the soul],

even though impression and fitness can be conceptualized only in something that has magnitude, then it can certainly be inscribed in something that does have magnitude, even if its magnitude is small.

[145.8] *And we confront them with several problems. First*: if vision primarily and essentially belonged to the soul, then when it turned its attention to the spirit in the two hollow nerves [of the eye], and the light of vision fell upon an illuminated object that is facing it, then there would have to occur to it a perception of everything that is illuminated and lit up, regardless whether it is facing one's vision or not, and regardless whether a veil between it and vision were removed or not, since there has been a turning of attention to the spirit, and that object is illuminated at the moment of attention, whether or not the light of vision falls upon it.

[T17] Al-Masʿūdī, *Shukūk*, 209.15–210.5; 210.9–12; 212.10–13; 215.8–11; 215.13–216.6; 216.7–18; 217.16–218.6; 223.11–18; 235.14–236.12; 237.12–238.8

[***defense and elaboration of Abū l-Barakāt's view***]

I said: [Avicenna] made the true reality of perception to be the occurrence (*ḥuṣūl*) of the representation of the perceived in the essence of the perceiver. The perceiving faculties are divided into corporeal and incorporeal. The incorporeal is the [210] intellectual faculty referred to as "rational soul." Its perceptions are either universals—which are intelligible forms and true realities separated from matter, existing in minds alone—or they are particulars. The latter are essences existing among concrete individuals, separate, free, and denuded of corporeal matter, and subsistent by themselves, such as the essence of the First—may He be praised an exalted—or the essences of intellect and souls. [...]

[210.9] The perception of the perceived by the intellectual faculty is an encounter (*mulāqā*) between the intellectual faculty and the forms of the intelligible true realities. By "encounter" I mean their being inscribed (*irtisām*) in the faculty and the occurrence of those forms in it. This is the true reality of the intellection of something, the true reality of knowledge, and of the awareness of something. [...]

[212.10] This which we have reported is agreed by most. But in fact, investigation and inquiry lead to [a different result]: that the true reality of perception is

something other than encounter. Rather, it is a relational state (*ḥāla iḍāfiyya*) of the perceiver to the thing that is perceived. This state may be referred to as manifestation (*ẓuhūr*), disclosure (*kashf*), awareness (*shuʿūr*), and knowledge (*ʿilm*). [...]

[215.8] Saying that the perceiver is divided into one kind that is corporeal, which perceives sensibles only, and another kind that is incorporeal, which perceives only intelligibles, is widespread and generally accepted; most people agree on this. Nobody disagreed with this apart from an eminent scholar of our own time, to whom God—may He be exalted—gave a special gift for investigation and inquiry. This is the author of the *Muʿtabar* [i.e. Abū l-Barakāt al-Baghdādī]. [...]

[215.13] For you are in no doubt that you hear sounds, see colors and shapes, and perceive certain intelligibles. Nor do you doubt that you are one in number, not two. Your one and the same self (*dhāt*) is not numerous faculties which are claimed to be in you as an individual. No reasonable person would hesitate over any of this. If, however, the perceiver of sensibles were different from the one who perceives intelligibles, then the substance of you yourself, which is in fact you, would not perceive both together. For if it did, then the perceiver of both would be [216] one, or you would be two in number, not one. So the faculty in you that perceives intelligibles is the substance of your rational soul, which is you, nothing else than [the soul], which is nothing other than you. If the faculty that perceives sensibles were something different from your substance, which is you, then it would not be you who sees or hears, as this would be impossible for you. Instead it would be something else that hears and sees. But if it is your substance itself, so that you do hear and see, and engage in intellection, then that which perceives everything is you yourself, and your single soul. [...]

[216.7] *If you say*: the visual faculty in the eye is my organ that perceives and sees, but then it transfers to me what it has perceived, owing to the contact between it and myself, so that I have awareness of something that the organ perceived, *we reply to you*: once it has been transferred to you, do you perceive the observed thing just as the organ did, or not? If so, then your perception and that of the organ being distinct, the perception of the organ is superfluous for your perception, just as would be Zayd or ʿAmr's perceiving while you are perceiving. For in perceiving, you would have no need of the perception of your organ. Rather, you would need it only as transferring something to you. So why not just say that the image (*shabaḥ*) of the visual objects is impressed in the eye, and then transferred to the soul by a "transferring faculty," not a "perceiving fac-

ulty"? All that's needed, after all, is something that transfers, not something that perceives. But if you say that you do *not* perceive once [the image] is transferred to you, then you have not seen and not perceived. Instead, you have merely realized that the eye, which is your organ, or the visual faculty in it, has seen and has perceived something. And that realization would be one thing, the true reality of vision another, so realizing that one sees is not at all the same as seeing. Yet I can't imagine you are in doubt as to whether it is you who sees and hears. [...]

[217.16] *If they say*: the only thing imprinted (*tantaqishu*) in [the eye] is a small form that resembles the form of a body that is large in measure, and is similar to it in everything apart from the measure, like the [image of the] human in the eye, for instance: it is just like the form of human apart from its measure.

We say: then we ought to see the [218] impressed form according to its own measure, not as bigger than it is. If the form of a large mountain, whose height exceeds one thousand cubits, is impressed in the brain, then it is impressed as small, fitting the measure of the brain. So we should see it small, just as it was impressed, without perceiving the mountain's height, size, and measure, which were not impressed. If the visual faculty is aware only of this small form, and perceives only its measures, how does then the measure of the external body get to be perceived? [...]

[223.11] One way to undermine the theory of impressions (*inṭibāʿ*) is that we perceive the difference in proximity and distance between visual objects that are near or far away from us. If the object of perception and awareness were the form impressed in the brain, and not the external thing which occupies its own true place and location, then we should perceive no difference between near and far. For all forms would be impressed in one and the same place inside the brain, without some of them being closer to us and some further away. The distance between us and the objects seen cannot be intellectually grasped in the brain at all, unlike the forms of bodies, since these can be imprinted on the bodily surface [e.g. of the brain or eye] whereas the distance cannot. [...]

[235.14] Further, a refutation of the view that affirms this faculty [of common sense] and its perception is that, if we imagine a form or remember something (*maʿnā*), then awareness and knowledge arise as belonging to the substance of our soul, which is our true reality (*ḥaqīqa*), or this is not the case. But it is absurd that this should not be the case. For no one doubts that it is he who is knowing whatever he imagines or remembers. But if knowledge of it does arise, then our knowledge of it is either identical to the perception of the faculty, or it is not. And is absurd that it be identical. For, when there is a difference of per-

ceiver, there must [236] necessarily be a difference in perception. Therefore, our awareness and perception of whatever *we* imagine and suppose is different from the awareness of that thing by the faculty. For this faculty's awareness would be superfluous, since it would just come down to our being aware of [what is imagined]. For example, if we know that Zayd is a friend of ʿAmr, or his enemy, then the one who perceives this friendship would be just a faculty in the brain, which is not the same as the substance of our soul. But then the substance of our soul would not know about it! Fine, it might perceive that one of its bodily faculties is perceiving that friendship. But knowing that some other faculty, which is not oneself, knows something, is not the same as knowing that thing. Then if the soul too perceives that friendship, doubtless its perception is different from the perception belonging to its faculty. We affirm and judge the existence [of something] on the basis of our soul's awareness of it, not on the basis of awareness belonging to the estimative faculty. Thus there is no need to affirm any perceiving faculty besides the soul. Admittedly, the soul does need organs of its own in order to perceive, these being parts of the brain, together with the spirits in them. Each part of [the brain] is an organ for a further kind of perception, as we have established in the case of the external senses. So there is no perception that does not belong to the soul, and no perceiver other than the soul. [...]

[237.12] A proof that soul does perceives sensible, corporeal items is that the objects of perception of these [aforementioned] faculties must either come to be perceived by the soul, or not. If not, then we have no awareness of what we hear, see, imagine, and suppose, but this is obviously false. On the other hand, if they are indeed perceived, then the soul does perceive sensible, corporeal items. Furthermore, the soul must also perceive these perceiving faculties, so as to be able to perceive whatever is perceived in them. But these faculties too are corporeal items, which exist in their subjects, as do all accidents.

Your claim that the soul enjoys only intellectual perception is senseless talk. If by this you mean that, when the soul perceives these faculties, or whatever they perceive, then it is perceiving intelligible items, not [238] corporeal ones, this is not so, as is pretty well obvious. On the other hand, if you mean that it perceives them insofar as they are faculties, and it is from this point of view that they are intelligible and universal—just as one might perceive the true reality of humanity on the basis of the individual Zayd—then this too is false. For, if it does not perceive these concrete, individual faculties insofar as they are these concrete beings, it will not perceive the individual objects of perception inscribed in them. It follows that we have no awareness of whatever we

sense and imagine. But we have no doubt that we do perceive all this. So the soul does perceive these objects of sensation and imagination, and does perceive these corporeal faculties. Moreover, it perceives the whole body which is its own.

[T18] Al-Rāzī, *Mabāḥith*, vol. 1, 440.14–441.2

[***becoming argument against knowledge as impression***]

If intellection were the result of impression, then when we intellectually grasp that black is opposed to white, the form of black and white would need to be impressed in us. Their subject of inherence must be one and the same, since a judgment about two things must be present to the one who judges about both. But they are by their very quiddities incompatible. The consequent is false, so the antecedent is likewise false.

If a quiddity is impressed in the intellect, then insofar as it is a particular form that arises in a particular soul, it is extramentally existent. Mental existence is either this, or some other existence. From the first [i.e. that mental existence is the impressed form's existing in the soul] it would follow that there is no difference between mental and extramental existence at all. Everything that applies to that quiddity when it is extramental would need to apply to it when it is mental. Thus intelligible heat would burn, and intelligible black would be visible and would contract vision. This is absurd. The second [i.e. that the impressed form has a different kind of existence] is also absurd, since it would follow that one and the same thing exists in two ways, so that it exists twice, which [441] is also absurd. Even if one granted that it has another kind of existence, extramental existence would arise [too], so again everything that occurs to it extramentally would need to apply [in the mind too, as in the objection to the first option].

[T19] Al-Rāzī, *Nihāyat al-ʿuqūl*, vol. 2, 155.9–11.

[***knowledge is not just inherence***]

If the perception of blackness, for example—regardless whether this perception is intellection, imagination, or vision—came down to the occurrence (*ḥuṣūl*) of the true reality of blackness for something, then a stone that has blackness as an attribute would perceive it, because blackness does occur for it. The consequent is obviously false, so also the antecedent.

[T20] Al-Rāzī, *Sharḥ al-Ishārāt*, vol. 2, 229.12–16

[***knowledge is not just inherence***]

If the true reality (*ḥaqīqa*) of knowledge and perception came down to the occurrence (*ḥuṣūl*) of one thing in another, separate [from matter], then when we conceptualize an existent which is neither a body nor something inhering in the body, and we believe that blackness inheres in it, in that case we would have to determine that this existent is knowing that blackness. For the true reality of knowledge would be nothing but the occurrence of blackness to that existent. As soon as we acknowledge this [sc. the occurrence of blackness to it], we have thereby acknowledged that the true reality of knowledge occurs for it. But we know necessarily that this is not so. For, once having learned that God the exalted is neither body nor inhering in a body, we may still be in doubt whether He, the exalted, knows Himself or not, and whether He knows that He is an agent for other things, or not. Thus we know that one thing's being aware (*kawn shāʿiran*) of another is different from the occurrence of that thing to it.

[T21] Al-Rāzī, *Nihāyat al-ʿuqūl*, vol. 2, 146.5–148.5

[***becoming argument, and two responses with replies***]

One thing's being attributed of another means simply the occurrence of the attribute for the subject of attribution. So when we intellectually grasp roundness, straightness, cold, and heat, the subject of intellection must become round, straight, cold, and hot, at the time it grasps them intellectually. But this is false.

Let it not be said: this does not follow, and for two reasons. *First*, we do not say that, when someone intellectually grasps roundness, roundness itself occurs in him. Rather we say that a representation (*mithāl*), form (*ṣūra*), or image (*shabaḥ*) of roundness occurs in it. And we say likewise regarding the conceptualization of fire. *Second*, "fire" does not come down to something that is "burning" without qualification. Rather, it comes down to something that is burning *if it exists extramentally*. Things being so, even if the true reality of fire occurs in the mind, it will not be burning, since the condition for its burning is that it exist extramentally. [147] And yet it is still fire, since it holds true of it, even when it is in the mind, that if its quiddity existed extramentally, *then* it would be burning.

For we say: as for the first response, it is wrong, since that which you call the "representation" and "form" of roundness either (a) has the same true reality as

roundness, or (b) not. (a) If the former, then these true realities do occur to the one who intellectually grasps them. So it must be that whoever intellectually grasps roundness is round, since by "the round" one understands simply that in which roundness occurs. (b) But if it does not have the same true reality as roundness, then the intellection of the roundness does not come down to the occurrence of roundness in the thing that is grasping it intellectually; and this was the result sought.

As for the second response, [it is wrong too,] because if we intellectually grasp fire as "that which implies burning when it exists in extramental reality," then inevitably we have grasped "burning." For our knowledge that one thing implies another under a specified condition presupposes our knowledge of the true reality of both what is implied and what implies it. But if we have grasped "burning," and intellection comes down to the occurrence of the intelligible object in the subject of intellection, burning has after all occurred in our mind, so that the mind is burning, given that "the burning" means simply "that in which there is burning."

[148] *Perhaps though they will say*: we do not intellectually grasp the true reality of burning either. Rather, we grasp concerning it that it is whatever implies certain necessary concomitant, *when it exists extramentally*. But our argument concerning this concomitant, whatever it is, will be the same as the former [concerning burning itself]. In general, the intellection of fire calls for either the intellectual grasping of its true reality, or the intellection of one of its necessary concomitants; on either assumption, absurdity follows.

[T22] Al-Rāzī, *Sharḥ al-Ishārāt*, vol. 2, 222.6–13; 223.11–224.1[15]

[***the subject of inherence cannot be corporeal***]

If the subject of inherence for imaginative forms were a body, then the subject of inherence for the intelligible forms we have affirmed would also be a body. But the consequent is false, therefore so is the antecedent. Proof of the hypothetical: if we see Zayd and imagine his form, we can judge that he is a human, not a horse. Human and horse are both universal quiddities. And whoever judges one thing with respect to another, while being one and the same judge, must conceptualize both universal terms [involved in the judgement].

15 The same argument can be found in al-Rāzī, *Nihāyat al-ʿuqūl*, vol. 2, 152.9–154.7.

For this is an assent, so it requires both conceptualizations. Hence, the one who perceives the concrete individual, whether by vision or by imagination, must, while being one and the same, perceive both the universal man and the universal horse. If that in which the imaginative form resided were a body, or were corporeal, then the one who is imagining is [also] a body, or is corporeal. And if this were so, then the one who perceives the universal man and the universal horse would [likewise] be a body, or would be corporeal. Thus the demonstration of the hypothetical. […]

[***the subject of inherence cannot be incorporeal either***]

[223.11] When we imagine a square with two completely equal squares on its sides, the imagination distinguishes between the two squares on the sides. This distinction has nothing to do with the quiddity or its necessary concomitants, since the two squares do not differ in quiddity or necessary concomitants, insofar as they are squares. Thus this distinction has to do with accidents. The difference between individuals of the same quiddity is due only to the receptacle (*qābil*).[16] This receptacle does not exist extramentally, given that we assumed that this square does not exist extramentally. So this receptacle is the mind. But if the subject of inherence of both forms were one and the same thing, then neither of them could be specified by an accident to the exclusion of the other. Therefore, the subject of inherence for one of the two squares must differ from the subject of inherence for the other square. Thus, the subject of inherence of these imaginative forms can only be divisible, and must be a body, or corporeal.

It has then been established that [224] the subject of inherence for imaginative forms cannot be a body or corporeal, nor can it fail to be a body or corporeal. [Thus imagination does not take place through inherence.]

[T23] Al-Rāzī, *Sharḥ al-Ishārāt*, vol. 2, 224.2–225.13[17]

[***Abū l-Barakāt's magnitude argument, possible responses, and replies***]

Several arguments indicate that vision does not involve the impression (*inṭibāʿ*) upon vision of the forms of what is seen. Firstly, we can see the hemisphere of the world, but the large cannot be impressed upon the small.

16 For matter or its equivalent, the "receptacle," as the principle of individuation see our chapter on Individuation in the *Metaphysics and Theology* volume.

17 The same discussion can be found in al-Rāzī, *Nihāyat al-ʿuqūl*, vol. 2, 149.15–152.8.

Don't say: (a) this is refuted by the case of mirror. For although it is small, the form of the hemisphere of the world is impressed upon it.

(b) Also, why can't one say that nothing is impressed upon the eye apart from that which equals it in magnitude? It's just that the forms of the parts of the visible object are impressed upon it in rapid succession, so that the person supposes he has observed this whole large visible object all at once.

(c) If this is not so, why can't one instead say that a form equivalent *in shape* to that of the hemisphere of the world is impressed upon the eye, but not one that is equal to it *in magnitude*?

(reply to a) To the first we say: this is wrong, because the verifiers among the natural philosophers have agreed that the forms of visible things are not in fact impressed upon the mirror, as may be proven in various ways …

[225.5] (reply to b) As for the second response, this is wrong, since in this case the eye could never sense anything apart from that which has its own magnitude, and could never sense any large thing. For when it observes something equal to it in magnitude, and then something else, then either its vision is still of the first object at the second moment, or not. If it is still [seeing the first object], then it has after all seen something larger than itself,[18] even though what is larger than it cannot be impressed upon it. Thus vision does not depend on the making of an impression. But if it does not still [see the first object], then no human can ever in his life see anything large, since he only ever observes that which has the same magnitude as the pupil of the eye.

(reply to c) As for their third response, it is wrong too. For a small body cannot receive the shape of a body which is large in magnitude, although it might receive a *similar* shape. Hence the vision of a large body, insofar as it is large, will not take place through the making of an impression.

Thus it is wrong to claim that [perception is] through the making of an impression.

18 In other words, the first object which is supposed to be its own size, plus at least part of the second object.

[T24] Al-Rāzī, *Sharḥ al-Ishārāt*, vol. 2, 226.9–11

[***accepts Abū l-Barakāt's theory of perception as relational state***]

On our view, the truth is that perception does not come down to the mere occurrence of that form, but rather a relational, connective state (*ḥāla nisabiyya iḍāfiyya*), either between the intellectual faculty and the quiddity of the form existing in the intellect, or between [this faculty] and the item that is established in extramental reality.

[T25] Al-Rāzī, *Sharḥ al-Ishārāt*, vol. 2, 227.4–7; 228.3–11

[***immateriality solution to the inherence argument, with response***]

[*Don't say*]: The occurrence of blackness in something would only mean this thing's perceiving it if that occurrence happens in a specific way, namely separation from matter. But this idea does not hold for the occurrence of blackness in the body, so it doesn't follow from the occurrence of blackness in a body that the body perceives it. […]

[228.3] This is unconvincing too. For the blackness that is impressed in the mind either fully shares in quiddity with extramental blackness, or does not. If not, then this undermines the whole idea of forms in the mind, to say nothing of the claim that the occurrence of this form is the same as knowledge of that quiddity. But if it does [share fully in the quiddity of blackness], then knowledge must be either [just] that form, or the additional elimination from that quiddity of something, or the occurrence of something additional to it at this point. The first is false.[19] The second too is wrong, since we necessarily know that knowledge is not something privative. And even if it were, this would still amount to recognizing that knowledge is not just the occurrence of that quiddity, but is rather something additional to it. The dispute would instead concern the question whether this additional item is privative or existing. But that's a separate issue. So, both of these options being wrong, the only one left is the third, namely that knowledge means something additional to the inherence of that quiddity in the intellect.

19 Because of the becoming argument, outlined in T21.

[T26] Al-Rāzī, *Sharḥ al-Ishārāt*, vol. 2, 228.12–229.4

[***on Avicenna's account in terms of "unification" of subject and object***]

You should know that the ancient philosophers (*falāsifa*) believed that knowledge comes down to the occurrence of the quiddity of the object of knowledge in the knower. They understood the need for a distinction between the occurrence of the intelligible object "blackness" in the intellect, and the occurrence of blackness in the wall. They could find no difference apart from saying that, when blackness occurs in the intellect, it unifies (*ittaḥada*) with the intellect, and intellect unifies with it. The blackness inhering in the wall, by contrast, does not form a unity with the wall, nor does the wall form a unity with it.

The Sheikh [Avicenna] went with the account in terms of unification (*al-qawl bi-l-ittiḥad*) in *The Procession and Return*, in the section which shows that God the Exalted is both subject and object of intellection. He argued for the unification by saying that, if the object of intellection did not form a unity with the subject of intellection, then the subject of intellection would not intellectually grasp the object of intellection. For the subject of intellection is either the soul, or a form inhering in it, or the combination of the both. [229] He ruled out that the subject of intellection is the soul by saying that, if soul were to intellectually grasp blackness because of blackness' inhering in it, then a stone would intellectually grasp blackness because of blackness' inhering in it. And he established this extremely well. Thus it became clear that speaking of knowledge as nothing but the making of an impression will not go through, without additionally saying that the subject of intellection unifies with the object of intellection. But then he returned to the account in terms of unification in this book [*Pointers and Reminders*], and admitted that it is a kind of nonsense. It's a puzzle how the two statements can be brought together.

[T27] Al-Rāzī, *Mabāḥith*, vol. 1, 447.22–26

[***knowledge is not just unification of subject with object***]

You have already learned the falsehood of the doctrine of unification (*ittiḥād*) [in general]. What specifically needs to be discussed here is that if, when someone intellectually grasps something, he were unified with it, and if he grasps something else so as to be unified with it [also], then his true reality would become the true reality of the second [intelligible object], in which case he must no longer be intellectually grasping the first intelligible object. Other-

wise one and the same thing would have two different true realities, which is absurd. Therefore, he must no longer be grasping the first when he intellectually grasps the second, but this [too] is absurd.

[T28] Al-Rāzī, *Sharḥ al-Ishārāt*, vol. 2, 233.14–235.1

[*skeptical argument against representationalism*]

With these arguments it has been established that perception does not just come down to the impression itself. The truth is rather that it is a relational connective state. For we know self-evidently that we have seen Zayd, given that our visual capacity faculty has a certain relation to him. Anyone who claims that the object seen is not Zayd, who exists extramentally and is not seen at all, and that the object seen is rather his representation (*mithāl*) and image (*shabaḥ*), has put into doubt the most important and powerful items of necessary knowledge. No such remarks should [234] be entertained by any reasonable person, let alone one make it a subject for investigation and detailed discussion.

[T29] Al-Rāzī, *Sharḥ al-Ishārāt*, vol. 2, 235.2–8; 235.17–236.6

[*correspondence problem for representationalist account*]

One should not say that the meaning of [an intelligible object's inhering in the intellect] is the occurrence of a representation in [the intellect]. The difference between a paradigm (*mithl*) and a representation (*mithāl*) is evident: a human painted on a wall is a representation of the physical human, but not a paradigm for him. We say, then, that the representation is similar to the paradigm in one respect, and differs from it in another. The human depicted on the wall resembles the physical human in shape but differs from him from other points of view, and that through which things share in common is distinct from that through which there is distinction. So when we intellectually grasp something, and its representation occurs in our minds, then if that representation is equivalent to the object of knowledge in all respects, then we are back with the same absurdity [namely that the intellect actually becomes its object]. But if it differs in some respects, then the respect in which there is difference cannot be known. Otherwise, the knowledge of this aspect has occurred, without there occurring the representation of that aspect in the mind, which invalidates the basis of their precept. [...]

[*relation suffices, and Platonic Forms are possible relata in the case of objects that are not otherwise present*]

[235.17] *Someone might say*: ignorance means simply that something occurs in the mind without anything corresponding in extramental reality. So if the mental form does not correspond to extramental reality, it is a case of ignorance. But if it does correspond, then there must be an extramental item [with which it corresponds]. So long as there is some item established in the extramental reality, why can't perception just come down to the occurrence of the relational state [236] between the perceiving faculty and that extramentally real existent? Even if the form we intellectually grasp and imagine is not present to us, why can't one say that it is nevertheless existent in itself, either by being self-subsisting as Plato said, or by being inscribed in certain bodies that are hidden from us? This may seem improbable. But in comparison to the inference that, when there is intellection of the heaven, a trace occurs in the mind that is equivalent to the heaven itself, so that a non-perceptual accident is equivalent to the self-subsisting substance in all respects, it is something easy [to accept] and not so improbable.[20]

[T30] Al-Rāzī, *Mulakhkhaṣ*, 116r8–16

[*Platonic Forms and mental forms as objects of knowledge*]

In general, we know necessarily that awareness (*shuʿūr*) can be realized only thanks to (*ʿinda*) a specific relation between the subject and object of awareness. And a relation cannot be realized without the relata. Furthermore, a thing may know either itself or something else. If it knows itself, then this knowledge cannot be realized in the absence of the object of knowledge among concrete individuals. Clearly then its existence is sufficient for the realization of that knowledge. As for knowledge of other things, it can know this other thing even while it is not currently in [the knower's] presence (*ḥāl ʿadamihi fī l-ḥuḍūr*). It must, then, have another reality. Those who affirm mental forms have established them as impressions in the mind. But we establish them as self-subsisting paradigms, following what was said by the *imām* Plato. You have already learned everything that follows from these two views. As for the question whether there is something else involved in the realization of that relation

20 On al-Rāzī's position regarding the intellection of non-existent objects see further *Metaphysics and Theology*, chapter "Non-Existence and Mental Existence."

which is called "awareness"—whether it be positive, relational, or negative—this is something for which there is no proof in the investigation of the quiddity of knowledge.

[T31] Al-Rāzī, *Ishāra fī ʿilm al-kalām*, 136.2–4; 137.4–138.4

[*does knowledge as relation require an existing object of knowledge?*]

It is known that relation can only be realized between existing things. But before it exists, a thing is not existent. So there can occur no relation between the essence of the knower and [the object of knowledge before it exists]. [...]

[*response*]

[137.4] We know the non-existence of a partner for God the exalted, and the non-existence of the co-occurrence of blackness and whiteness. But neither the non-existence of a partner for God the exalted, nor the non-existence of the co-occurrence of blackness and whiteness, has a quiddity and true reality, such that there could be [138] a connection and link between them and the knower. If they are not real, the cause of their perception cannot be the inscription of their forms upon the knower's self (*dhāt*). For how can the forms of what is not real be inscribed upon the knower's self? Thus it is established that the occurrence of knowledge does not depend on the occurrence of the object of knowledge, nor on the inscription of its form upon the knower.

[T32] Al-Suhrawardī, *Talwīḥāt*, 237.6–238.7

[*on knowledge as unity*]

Some people believed that for someone to perceive something is to become that thing (*yaṣīru huwa huwa*). Others believed that for the soul to perceive is for it to unite (*ittiḥād*) with the Active Intellect. But you have learned above that two things become one only through mixture and connection, or through a compositional arrangement, but this is proper to bodies. Furthermore, if we say that C becomes B, then either C remains when B arises—in which case they are numerically distinct—or C perishes, or B does not arise. [On either option] there is no unity [between B and C]. They were confused when they heard it said that water becomes air. This means simply that the *matter* of water became air; that is, [the matter] lost the form of water and took on the form of air, while remaining common [to both]. But nothing like this happens in the soul. Furthermore, if the soul intellectually grasps C, does it remain as it was? In that

case there would be no unity, nor would anything arise. Or does it perish and something else does come to be? In that case, there would be no unity. Or does it change in state? This is not far from the truth, yet it is not unity; rather, [238] it is just like other changes. Now, it is fine to speak of connection (*ittiṣāl*) to the active intellect, but *unification* with it would imply either dividing it, or grasping all sorts of knowledge in one single knowledge, which is evidently false. An eminent later thinker ascribed this view to Porphyry, and [Avicenna] has greatly slandered him in a way unbecoming to the eminence of both.[21] Yet in *The Procession and Return* and other books, [Avicenna] claimed that the unity between the soul and the intelligible is unproblematic. Then finally, he came to understand its falsehood. But in the beginning [Avicenna] either uncritically accepted (*qallada*) it, which is absolutely inappropriate; or it was the result of his own reflections, in which case he should have slandered himself too!

[T33] Al-Suhrawardī, *Mashāriʿ*, *Ilāhiyyāt*, 484.14–486.17; 487.6–17

[***knowledge by presence without forms***]

Furthermore,[22] the soul perceives its body and perceives its own estimation (*wahm*) and imagination. If it perceived these things through a form in itself, these forms being universal, then the soul would move body as a universal and use a universal faculty. It would not have any perception of its own body nor of the faculties of its body. This is incorrect. How can estimation be unaware of itself and also the internal faculties, while not failing to recognize their effects? For on the assumption that [485] estimation does not perceive these faculties, nor does any corporeal faculty perceive itself, but the soul perceives universals only, then the person could not perceive his body, his estimation, or his imagination, which are particularly specified for him. This is not the case. For every person perceives his particular present (*ḥāḍira*) body and his particular present faculties, and uses a particular faculty. So the person perceives himself not through a form, nor does he perceive his faculties as a certain whole through a form, and he perceives his body as a certain whole, not through a form.

21 For Avicenna's critique of Porphyry see P. Adamson, "*Porphyrius Arabus* on Nature and Art: 463F Smith in Context," in G. Karamanolis and A. Sheppard (eds), *Studies on Porphyry* (London: Institute of Classical Studies, 2007), 141–163, at 156–160.

22 For the preceding context see in this volume Self-Knowledge [T25].

In support of the claim that we have perceptions which require no forms beyond the presence (*ḥuḍūr*) of the perceived object itself (*dhāt*): a person feels pain through the severing of connection in one of his organs, and is aware of it. It's not that the severing of the connection gives rise to a different form in this organ, or in anything else. Rather what is perceived is the severing itself. It is the object of sensation, and is in itself pain, not through some "form" that arises from it. This shows that with some objects of perception, just the occurrence of [the thing] itself to the soul suffices for perception; or [it is perceived] through something which has a specific connection of presence (*taʿalluq ḥuḍūrī khāṣṣ*) to the soul.

[***attention argument***]

A point that forces the Peripatetic party to acknowledge this: they admit that sometimes, forms may occur in the visual organ without the person being aware of it, if he is occupied with a thought, or with something brought forth by another sensitive power. The soul must turn its attention to that form. So perception is nothing but the soul's attention (*iltifāt*) towards that which it is seeing with [active] observation. And observation is not through a universal form, but through a particular form. So the soul must have illuminationist knowledge by presence (*ʿilm ishrāqī ḥuḍūrī*), not through a form.

[***magnitude argument***]

[486] Whoever denies that that vision occurs through rays is forced to accept either the impressing of an image (*inṭibāʿ shabaḥī*), or not.

(a) If he is forced to accept the impressing of a simulacrum, he will face problems: how can the form observed from a large magnitude be imprinted upon the cornea, or the like? It's no good to plead that both are infinitely divisible: a hand doesn't cover the width of a mountain, even though both are infinitely divisible in the estimation. It's difficult to reckon the mountain as having the same amount of parts as the hand. But if someone who speaks of the impressing of the simulacrum turns to what some recent [scholars] said, namely that the soul completely perceives a thing's magnitude through inference (*istidlālan*), then this "inference" would see the thing with a complete observation. But observation is not of anything universal: it is of something particular, which has magnitude. And this interlocutor cannot allow that it [sc. a particular with magnitude] is impressed in the soul. So he has acknowledged illuminationist observation, which belongs to the soul in relation to the whole magnitude of a thing, with no need of a form for [perceiving] its complete magnitude. (And bear in mind that this view was earlier refuted anyway.)

(a) Someone who will not be forced to admit the impressing of an image, nor the emission of rays, and in general does not admit that anything enters into [the organ of] vision or the emission of something from it, or that there is a qualitative change due to the organ of sight, will be forced to acknowledge that vision comes down to the opposition (*muqābala*) of the luminous object to the organ of vision. It is through it, and nothing else, that presential illumination happens. Therefore on any of the assumptions made, one must accept illuminationist knowledge by presence, belonging to the soul. [...]

[*different types of knowledge*]

[487.6] Those who follow the path of the Peripatetics can summarize their whole view by saying that knowledge or intellection is the absence of the hiddenness of something from an essence which is separate from matter. If then it is intellection of something by itself, this is thanks to its not being absent from itself. If it is [intellection] of the necessary concomitants of itself, this is thanks to their not being hidden from it, they being present to it. We have need for a form only in the case of certain things, like the heavens and stars, because they are in themselves hidden from us. So we make their forms present [to us]. If they were present here with us, as are the things already indicated, we would have no need of a form.

Everything the soul perceives must be divided as follows. (a) Universals, [perceived] through the presence of a form impressed in the essence of [the soul]. (b) Particulars, perceived through either the presence of themselves and illumination of the soul, or through the occurrence of [the particulars] in something else that is present to the soul, and for which the soul has illumination. Thus the soul perceives particulars either through their presence to it, or through their presence in something which is present to it, for instance imaginative forms. While this does call for investigation, it can be discovered only by those who are among the proponents of Illumination. The whole view can be summarized as follows: they [sc. the particulars] are not hidden from it [sc. the soul].[23]

23 For further passages on al-Suhrawardī's theory of knowledge by presence see chapters "God's Knowledge" and "God's Knowledge of Particulars" in *Metaphysics and Theology*.

[T34] Al-Āmidī, *Abkār al-afkār*, vol. 1, 76.19–77.3

[***becoming argument***]

The philosophers said: knowledge comes down to the impression of the form of the object of knowledge upon the soul.

They are forced to admit that when someone knows heat or cold, then the form of heat or cold are impressed upon the soul, with the consequence that the knower becomes hot or cold, which is absurd.

[77] *If they say*: it is just the representation (*mithāl*) of heat or cold that is impressed, and not heat and cold themselves. *It may be replied*: if the representation is equivalent in true reality to the paradigm (*mathal*), then the problematic consequence is forced upon them. If not, then [the object of knowledge] is not a model for it, so knowledge is not connected (*mutaʿallaq*) to [its object].

[T35] Al-Āmidī, *Abkār al-afkār*, vol. 1, 79.4–12

[***knowledge is not a relation***]

It has also been claimed that knowledge is a relational attribute (*ṣifa iḍāfiyya*) between the knower and the known. This calls for investigation. For if they say that relation is a privation, then the negation of a relation will be positive. From this it follows that negating a relation with respect to pure non-existents would lead to ascribing a positive attribute to the pure non-existent; but this is absurd. But if they say that the relation is existing, then the relation between the earlier and the later must be a positive attribute for both of them, even though one of them is non-existent [e.g. when the earlier exists the later does not yet exist]. And it would follow that the relation of opposition between negation and affirmation would be a positive attribute; but negation is a pure non-existent. Therefore both options lead to absurdity, so knowledge is not a relational attribute.

[T36] Al-Āmidī, *Abkār al-afkār*, vol. 1, 344.9–15

[***against both the impression and relation accounts: knowledge is an attribute***]

Regarding their claim that the knowledge of something means either the impression of its form in the soul of the knower, or the relation between the knower and the object of knowledge, two responses may be given.

First, to deny that these are the only options. Instead, knowledge is an existing attribute (*ṣifa*) that is additional to the essence. It is not the impression itself, nor is it the relation itself which occurs between the essence of the knower and the object of knowledge. Rather, the association and relation is precisely between the *attribute* of knowledge and the object of knowledge. [...][24]

[T37] Al-Āmidī, *Kashf al-tamwīhāt*, 163.12–19

[***response to T22***]

[Al-Rāzī's] argument that when we see Zayd or imagine his form we can judge him to be a human, not a horse, and so on up to the end of his argument, is open to refutation. The referent of "Zayd" is something described as having such-and-such a shape, or such-and-such an attribute. [This] thing, when taken without considering the attributes that yield its individuation, is perceived by the rational soul, whereas the attributes and the shapes that yield its individuation are perceived by the imagination. So when we say "Zayd is a human" we do not mean that the form and shape of Zayd perceived by the imagination is a human, which would lead to the problems he mentioned. Rather we mean that something which is described in such-and-such a way, and is called "Zayd," is a human, not insofar as it is so described[25] (otherwise nothing else would be a human), but insofar as it is this thing, and this thing is a universal.[26]

[T38] Al-Āmidī, *Kashf al-tamwīhāt*, 168.1–4

[***representationalist solution to the becoming argument***]

When [al-Rāzī's] says it is clearly wrong [that the form in the mind is equivalent to the extramental object], this would be so only if [the form in the mind] were similar to [the extramental object] in existence. But to the contrary, on the assumption that it is a representation of the true reality and has intellec-

24 For al-Āmidī's view that knowledge is an attribute, which he develops as a reversal to the traditional Ashʿarite view, see T44–T46 in "God's Knowledge of Particulars" in *Metaphysics and Theology*.

25 We correct *fa-mā* to *bi-mā*. Note that the next line belongs to the argument as well, but it is clearly corrupt as *majhūl* make no sense in the context.

26 In contrast to *Ghayāt al-marām*, *Rumuz al-kunūz*, and *Abkār al-afkār*, in *Kashf al-tamwīhāt*, al-Āmidī defends Avicenna's doctrine of knowledge as impression against al-Rāzī's objections.

tual existence, whereas the existence of the true reality in concrete is not so. All the rest of his arguments may be refuted with this point. For we say: [the form in the mind] is the representation of the true reality in all respects, but is not like it in respect of existence.

[T39] Bābā Afḍal, *Madārij al-kamāl*, 50.1–7 [trans. Chittick, mod.]

[***knowledge as identity, without representation***]

The fourth rank is to have the third rank, and be aware that knowledge is perceiving (*yaftan*) something through the self, as belonging to the self. Along with this knowledge, they know too that what is perceived in the self is not a trace of anything apart from the self. For example, what is perceived through the sense of eyesight, namely the color and shape of a thing, would not be that thing's true reality. Let them not suppose that what is perceived through the self is like this, that it is a trace, shape, or mark of something, and not that thing [itself]. Rather, they should know that what is perceived and known is the true reality of the thing in the self. For, were the thing not perceived first, and only then its trace, they could never have known that the trace is the trace of that thing, having not perceived the thing [itself].

[T40] Bābā Afḍal, *Anjām-nāma*, 69.15—19 [trans. Chittick, mod.]

[***knowledge as finding things in oneself***]

Awareness and knowledge are the perception of things in the self. Whatever has no being cannot be perceived. It is possible for a person to know all things. So if a person perceives all things in himself, and if what has no being cannot be perceived, then all things are in the self. Thus the human soul is comprehensive (*ʿāmm*) and encompasses all things which are within it.

[T41] Bābā Afḍal, *Arḍnāma*, 197.14–20

[***connecting knowledge to existence***]

By the term "knowledge" we mean simply the clarity and evidentness of something's existence. By "object of knowledge" we simply mean something clear and evident. By "subject of knowledge" we simply mean the cause and the reason for the clarity and evidentness of a thing. By "clarity and evidence" we intend the completeness of a thing's existence. By "unknown" we mean simply

the hidden and the secret. Something [may] be either evident or secret in the self of a person. By "self" (*khūd*) we mean here the soul (*nafs*): that things may be either manifest or secret in the human soul. Whatever is clear is said to be known and perceived; whatever is secret is said to be unknown and unperceived.

[T42] Bābā Afḍal, *Madārij al-kamāl*, 22.5–9

[***knowledge through a trace from the Intellect***]

Hence the self's awareness, knowing, and perception (*yaftan*) are the existence of the Intellect, while other existents are the things perceived by the Intellect. The Intellect is one—it is not that many things are collectively the Intellect. Rather, the Intellect is the utmost limit of the clarity (*rūshanī*) of existence, and its origin and source. Thus it is said of some human individuals, each of which is called "endowed with intellect," that such-and-such an individual is prepared for the manifestation of the trace of Intellect, while another is less than the first in preparedness and worthiness.

[T43] Anonymous, *Al-Nukat wa-l-fawā'id*, 154.9–14[27]

[***against Abū l-Barakāt's theory of perception***]

Pay no mind to what the Sheikh of the Jews [sc. Abū l-Barakāt] says, namely that the perceiver of these [phenomena] is the soul itself without any organ. For one thing, no particular corporeal form can be impressed upon the soul, only a universal intellectual form, as will shortly be explained to you. Also, we observe a falling raindrop as a line, and a single flame as a circle when it is quickly rotated, but we do not perceive with the senses anything that lacks extramental existence. So it remains that it is internal. Its existence is not in the soul, since [the soul] must be different from [what it perceives], and since no particular form can arise in [the soul]. So it remains only that it exists in some other internal faculty, which is called "common sense."

27 Taken from W. Kutsch, "Ein neuer Text zur Seelenlehre Avicennas," in *Avicenna Commemoration Volume* (Calcutta: 1956), 147–178.

[T44] Al-Abharī, *Kashf al-ḥaqā'iq*, 333.9–19

[***change shows that knowledge is impression***]

When we perceive something either something occurs in the soul, or not. The second is false, since otherwise, our state before the perception would be the same as our state after it, which is known necessarily to be false. That leaves the first option. Now, what occurs [in the soul] is either the form of the perceived object, or not. But the second is absurd, since the occurrence anything other than the form of the perceived object would not be perception of it. That leaves the first option, which is what was sought. [...]

[***immateriality objections to the inherence argument***]

[333.16] We do not claim that perception is the same as the occurrence of a thing's quiddity in something else. Rather, we claim that perception is the occurrence of a thing's quiddity separate from all external attachments, in the essence that is separate from matter. So it is no refutation that a stone may have blackness as an attribute.

[T45] Al-Abharī, *Kashf al-ḥaqā'iq*, 335.1–8

[***intelligible forms of substances are not accidents in the mind***]

You should know that the intelligible forms of substances are substances. For one may truly say of them that, if they were to exist among concrete individuals, they would not be in a subject. The Imam [al-Rāzī] said they are accidents [when they are objects of thought], since at this point they are existent in a subject; but their being in a subject at this point does not prevent them from being *not* in a subject, if they were to exist among concrete individuals. But this is unconvincing. For an accident is a quiddity that would be in a subject if it were to exist among concrete individuals. And it is not true of [the intelligible forms of substances] that, if they existed among concrete individuals, they would be in a subject. So they are not accidents [even when in the mind]. Among the intelligible forms, it is the accidents of which it may truly be said: they would be in a subject, were they to exist among concrete individuals.

[T46] Al-Abharī, *Kashf al-ḥaqā'iq*, 334.11–13

[***universal forms may give knowledge of particulars; response to t33***]

We say: [regarding al-Suhrawardī's argument that the soul must perceive a particular body], we do not concede that, when what is impressed in the soul is universal, it is not a perception of some particular body. This would follow only if that which is impressed is not a separate form that corresponds to that particular.

[T47] Al-Abharī, *Muntahā*, 303.22–304.10

[***knowledge of other things vs. self-knowledge***]

The intelligible may be distinct from the subject of intellection. In this case its form must be present (*ḥuḍūr*) in his intellect. For everything intelligible may be distinguished, and everything that may be distinguished is existent, so hence everything intelligible is existent. [304] Its existence is either in extramental reality or in the intellect. But the first is false, since no intelligible form excludes being predicated of many things in extramental reality, whereas everything existing in extramental reality is excluded from being predicated of many. Therefore the intelligible form is existent in the intellect.

[The intelligible] may also be identical to the [subject of intellection] himself, as when soul grasps its own specific self intellectually. But when the soul has a further intellectual grasp of its quiddity insofar as it is what it is, then a universal form occurs in it, which is distinct from its own specific self and different from its intellectual grasp of itself. For in the latter case no other form occurs in it. [...]

[***general account of intellection, which covers self-knowledge***]

[304.8] In general, intellection comes down to the presence of a quiddity that is separate from extraneous attachments in something that is separate from extraneous attachments.[28] This is broader (*a'amm*) than "the presence of a separate quiddity that is distinct from the subject of intellection."

28 Deleting *fī shay' mujarrad*.

[T48] Al-Abharī, *Bayān al-asrār*, 53^{r}17–53^{v}8

[***knowledge by presence to explain self-awareness***]

You should know that the perception of something may be through the representation (*tamaththul*) of its form in the perceiver, such as the representation of a universal form in the soul. This is the occurrence (*ḥuṣūl*) of a separate form in something separate, and it cannot happen in the Necessary Existent. [Perception] may also take place by one thing's not being hidden (*ʿadam al-ghayba*) from another, while a distinct essence is present (*ḥuḍūr*) without any representation of its form in [the perceiver], like the soul's perception of its body which is at its disposal. For it perceives it [53^{v}] continuously as not hidden from it. This does not happen through the occurrence of an individual form in the soul. [The soul] only perceives particulars in a universal way, like our perception of Zayd on the basis of his being tall, black, pious, and knowing, such that these universals are not conjoined in anyone else. Nevertheless, even when these universals are combined, the soul is not prevented from imagining that the same notion (*mafhūm*) is shared [by something else].[29] So [the soul] does not form representations of particulars, but it does move a particular body and is aware of a particular body. But whatever [the soul] has in terms of forms, it will not be prevented from imagining that they are shared. So the perception of these forms is not the perception of the specific body which is at the disposal of the soul. This [kind of] perception comes down to the presence (*ḥuḍūr*) of something to the self, the latter being separate from matter, and having in it no representation. This is knowledge by presence.[30]

[T49] Al-Ṭūsī, *Talkhīṣ al-Muḥaṣṣal*, 156.20–157.12

[***response to the becoming argument***]

As for [al-Rāzī's] rejection of the doctrine that [knowledge] is the making of an impression, on the grounds that this would imply that whoever knows heat becomes hot, this is incorrect. For [the proponents of this view] speak of the impression of a form which is equivalent to heat, and there is a difference between the form of something and the thing itself. For instance human is

29 For the point that any combination of universal properties can in principle belong to more than one particular, see our chapter on Individuation in *Metaphysics and Theology*.

30 Generally, al-Abharī tends to accept the Suhrawardian definition of knowledge by presence in *Muntahā*, *Bayān*, *Talkhīṣ*, *Zubdat al-ḥaqāʾiq*, and *Maṭāliʿ*, but apparently denies it *Kashf al-ḥaqāʾiq* as can be seen from T46.

rational, but his form is not rational. As for his argument that "if it is equivalent in the complete quiddity, the trouble still follows," the truth is that [the form] is not equivalent [to the thing itself] in the complete quiddity. For what would be equivalent in the complete [157] quiddity is either the quiddity itself, or one of its individual instances, but not its form. Since the quiddity and its form are two different types of things, the form is not the quiddity. [...]

[***response to the inherence argument***]

[157.6] His argument where he responds that, if perception were the same as occurrence, then a stone would be in a position to perceive since things occur to it, is incorrect. For they would say: perception is the same as occurrence in a receiver that satisfies a specific condition. For if we were to say, "being rich is the occurrence of wealth for whoever is in a position to have wealth occur for him," it would not follow from this that a donkey for whom property has occurred would be rich.

[T50] Al-Ṭūsī, *Sharḥ al-Ishārāt*, vol. 2, 404.3–8

[***whether perception requires attention, not just presence***]

If it is said: by "observation (*mushāhada*)" he just means presence (*ḥudūr*), *then one may reply*: presence does not suffice. Presence to sensation without the soul's paying attention is not perception. *But the* [*ultimate*] *response* is that perception is not just something's being present to sensation, but is rather that it be present to the perceiver thanks to its presence to sensation. It is not present twice over, though, since it is the soul which is the perceiver, through the intermediary of sensation.

[T51] Al-Ṭūsī, *Sharḥ al-Ishārāt*, vol. 2, 406.1–4; 407.9–408.2

[***objection to the relational account***]

Among them are those who made the relation that occurs between the subject and object of perception to be perception itself, heedlessly adopting this view in light of objections brought forward against perception's being a form, while overlooking that relation requires the reality of the relata. Thus they are forced to admit that only that which extramentally exists is an object of perception, and that perception can in no way be ignorance, since ignorance is the failure of the mental form to correspond to extramental reality. [...]

[*response to points made by al-Rāzī in T29*]

[407.9] *Response to the first point*: among forms some correspond to extramental reality, these being knowledge, and some do not correspond to extramental reality, these being ignorance. But neither correspondence nor its failure apply to relation, since it cannot have extramental existence. So perception in the sense of relation would be neither knowledge nor ignorance. [408] *Response to the second point*: neither Plato nor any other philosopher believed that self-contradictory absurdities exist in extramental reality. No one can adopt this view.

[T52] Al-Ṭūsī, *Sharḥ al-Ishārāt*, vol. 2, 410.4–7

[*solution to the becoming argument*]

Response: if roundness is particular then it has a position, and its subject of inherence must also have position. So, the part which is its subject of inherence becomes round through it, insofar as it is the subject of its inherence. But from this it does not follow that the perceiver [that is, the soul] whose organ is the subject of inherence becomes round. On the other hand, if roundness is universal, then it has no position so there is no implication that its subject of inherence is round.[31]

[T53] Al-Ṭūsī, *Sharḥ al-Ishārāt*, vol. 2, 413.5–8

[*solution to the double perception problem: the perceiver is the soul*]

Perception is not the occurrence of form in the organ alone. Rather it is its occurrence in the perceiver due to its occurrence in the organ. In light of which perception occurs neither in the common sense, nor at the intersection of the two [optic] nerves, but rather in the soul through the intermediary of both of these instruments, upon the occurrence of form in the two aforementioned [sites] or in something else.

31 For al-Ṭūsī's solutions to the magnitudes argument (*Šarḥ al-Išārāt*, vol. 2, 408.4–10) see T73.

[T54] Al-Ṭūsī, *Sharḥ al-Ishārāt*, vol. 2, 413.12–17

[***solution to skeptical problems about knowledge as impression***]

There is no doubt or disagreement that what is seen is Zayd [not only a representation of him]. Vision is the occurrence of his representation (*mithāl*) in the perceiver's organ. The source of this line of argument is a failure to distinguish between the object of perception and perception [itself]. The objections others have brought forth against [Avicenna] run along the same lines: how can perception be a mental form corresponding to that which is in extramental reality, if one can only be aware of this correspondence after being aware of that which is in extramental reality? The answer is that correspondence does not involve awareness of correspondence. The first is a condition [for perception to occur], but the latter isn't.

[T55] Al-Ṭūsī, *Sharḥ al-Ishārāt*, vol. 3, 914.6–915.10

[***cases of knowledge without the inhering of a form***]

I say: just as no one endowed with intellect requires, for his perception of himself, any form apart from his own form, through which he is what he is, likewise, for the perception of whatever proceeds from him through himself, he requires no form apart from the form of this which proceeds, through which it is whatever it is.

Suppose in your own case that you intellectually grasp something through a form you have conceived, or made present [to yourself]. It proceeds from you, not absolutely from you as a separate entity, but by sharing in common with something other than you. Still, you do not intellectually grasp that form through something else. Rather, just as you intellectually grasp this thing through [the form], so also you grasp [the form] through itself, without any duplication of forms in you. Instead, all that is sometimes duplicated would be the modes of consideration under which you grasp yourself and that form, by way of composition.

[915] And if this is how things are for you in the case of whatever proceeds from you shared in common with something else, then how do you suppose things are for someone who is endowed with intellect with regard to that which proceeds from him [just] through himself, without anything else being involved? Do not suppose that your being the subject of inherence for that form is a condition for your having an intellectual grasp of it. For you may conceive of yourself

while not being your own subject of inherence. Rather, your being the subject of inherence for that form is simply a condition for the occurrence of that form in you—this being a condition for your intellectual grasp of it—when that form occurs by inhering in you. But if that form occurs to you in some other way, without inhering in you, then the intellection occurs without anything inhering in you.

And clearly the occurrence of something to the one who produces it, such that it occurs in something else, does occur in that which receives it [but not in what produced it]. Therefore, the essential effects which belong to an agent endowed with intellect, through himself, occur to him without anything inhering in him. He intellectually grasps them without their inhering in him.[32]

[T56] Al-Ṭūsī, *Fī l-idrāk*, 522.7–523.15

[***types of perception***]

By "perception (*idrāk*)" we understand that which is common to intellection (which is the act of soul in itself), imagination (which is the act [of soul] through its imaginative faculty), and estimation and sense-perception (which are its acts through the estimative and sensitive faculties). What is perceived intellectually—and this is what is meant by the expression "object of knowledge (*maʿlūm*)"—is that which is said to be the act of the soul through itself, not through any organ. Its specific characteristic is that it is universal. In other words, it is one in the soul, not many, even though it is susceptible to multiplicity outside the soul. By contrast the specific characteristic of the object of the senses, and object of the imagination, is to be one and not susceptible to multiplicity, whether in the soul or in extramental reality.

The objects of perception for the senses, estimation, and imagination are the traces (*athār*) and forms (*hayʾāt*) of things, not the things themselves or their true realities. By contrast the object of *knowledge* is the true reality in itself, and its definition in the soul. For the intellect presents to itself things that are separated from accidents, and accidents separated from their bearers. But the aforementioned faculties [sensation etc.] are not capable of this, since if they separated things from forms and accidents, then these faculties would be

32 On the ways in which al-Ṭūsī accepts knowledge by presence see further the chapter on "God's Knowledge of Particulars" in *Metaphysics and Theology*.

stripped of their perceptions. It is in the intellect that the true reality of the object exists. That which exists in the soul, and is called the "object of knowledge," is the thing itself, and its true reality. [...]

[523.5] When something is known in itself, its existence is the same as its being known. If that which is known in itself is sensed or imagined, then its being sensible or imaginary is accidental to it. Therefore, objects of knowledge are only accidentally sensible or imaginary. This rationale applies on the side of the perceiving subject. The perceiving substance is either perceptive in itself, as with the soul that perceives intellectually, or not, as with the perception belonging to the faculties of estimation, imagination, and sense-perception. If something is not perceptive in itself, its cognition is not substantial for it, and if something's cognition is [not] substantial for it, it does not perceive itself. So the faculties of estimation, imagination, and sense-perception are not self-perceiving. They have an existence which is not the same as their perception. This is the baser and the lower of two types of existence. But if something's perception is essential and substantial for it, it does perceive itself. It has no existence apart from its perception, for its essence consists in being perceptive, and it is its existence; there is no distinction between its essence and existence, which is perception. This is the noblest kind of existence.

[T57] Al-Ṭūsī, *Risāla fī l-ʿilm*, 86.5–88.20

[***against knowledge as relation***]

[ʿAlī ibn Sulaymān al-Baḥrānī] said: a group of theologians (*mutakallimīn*) came to believe that knowledge is neither an entity (*maʿnā*) through which the objects of knowledge are revealed, as the earlier scholars said; nor is it the occurrence of the form of the objects of knowledge in the mind, as the later scholars argued; instead, it is simply the knower's awareness (*shuʿūr*) of the object of knowledge, which is a relation between the knower and the object of knowledge. It is neither the entity that implies a connection (*taʿalluq*) to the object of knowledge, nor a form (*hayʾa*) that implies a relation to the object of knowledge. It is just the relation itself, not that which possesses the relation. This is the view chosen by Abū l-Ḥusayn al-Baṣrī and his followers, and of Fakhr al-Dīn al-Rāzī among the new scholars.

What we say on this topic: whoever claims that knowledge is the relation itself cannot avoid saying that, together with this relation he calls "awareness," there will be mental forms—even if he doesn't call these forms "items of knowledge."

So the disagreement concerns simply what should be called "knowledge": the form that implies the relation, or the relation itself? Or he might say that there are forms for the objects of knowledge here, which occur in the mind, but every one of these forms has a specific association and positive relation. But then he has conceded what the philosophers (*ḥukamā'*) wanted to say. The dispute concerns only the term "knowledge," whether it is applied to the relation itself or to the forms that imply the association. This is a merely verbal question, and it is inappropriate for the theologians to dispute about it.

Likewise one may say to him, taking the viewpoint of the theologians: either you affirm, along with the relation, an entity that entails the relation, but then the dispute merely concerns what [the word "knowledge"] means, as already stated; or he believes that there is no such entity as claimed by the theologians, and affirms no mental forms, in opposition to what the earlier scholars chose to do. He affirms nothing but the knower himself and the object of knowledge itself, and the relation between the two, without affirming anything else.

So let us explain why he is wrong by arguing as follows: this association must be either (a) occurring and existent, or (b) not occurring and not existent. [87] (a) If it occurs, then it can be realized only when both relata are realized. In that case, it follows that this association, namely "knowledge," can be affirmed only for existent things. So there could be no knowledge of anything non-existent, because it is neither real nor occurring, such that an association could occur to it. It is because of this nice point that the Mu'tazilite masters affirmed real entities (*a'yān thābita*) for things in non-existence, in order that knowledge could be connected to them, and so that they could be distinguished one from another. If they had spoken of mental existence, then they would not have made the mistakes for which they have been blamed. [In any case], it has thereby been established that association can hold only between real relata, and that sheer non-existence and absolute negation cannot be distinguished; nothing can be connected or associated with them. This should be clear to anyone who ponders it.

(b) If however the association that, according to him, is knowledge, is not real and not occurring, then knowledge and lack of knowledge would be the same. For when someone does not have knowledge about something, the association to it does not occur, but if he does have knowledge of it, still the association is not affirmed. But anything that leads to the equivalence between someone's knowing and not knowing is absurd. Thus is it established that his

claim, namely that the true reality of knowledge is only a relation, without the addition of anything else, is false. […]

[88.10] *I say*:[33] there can be no doubt concerning the existence of this relation between the knower and the object of knowledge. To one who says it is knowledge itself, one should say what this eminent scholar has laid down. Now, on the basis of this inquiry, we may set down three items: that through which the self is knowing; the mental forms; and the relation.

But to provide verification, one must [show] either that the forms are known in themselves, or are known through something that stands in for them (*yaqūmu maqāmahā*). [In the latter case] knowledge will be knowledge only when one intellectually grasps the correspondence between that which stands in for [them] and the true object of knowledge. But if one does grasp [this correspondence] intellectually, one has already perceived the object of knowledge itself, which is one of the two things that correspond to each other, along with [the other correspondent, namely] that which stands in for it. [One must also show] that the relation is not something needed for knowledge or perception itself. Rather, it is something the reasonable person finds to be implied by knowledge and perception, after both have been grasped intellectually. And that which is implied by a thing only after [the thing] has already been grasped intellectually is neither that thing itself, nor any of its constituents. Therefore, in reality knowledge is just the first item alone [sc. "that through which the self is knowing"], not taken as related to any object of knowledge. When it is related to the objects of knowledge, though, then what is intended is just the forms, or just the relations, or the first item together with a consideration of the forms and relations. So this is what needs to be verified.

[T58] Al-Kātibī, *Munaṣṣaṣ fī sharḥ al-Mulakhkhaṣ*, 305^{v}17–24

[*doxography of theories of knowledge*]

The Master [sc. Avicenna] wavered in his position on [knowledge], sometimes making it come down to something privative, and explaining it in terms of separation from matter; sometimes, making it come down to an existing [i.e.

33 Note that the whole previous account and the argument is a quotation from a Shia scholar Jamāl al-Dīn ʿAlī ibn Sulaymān al-Baḥrānī, the teacher of another famous Shia scholar Maytham al-Baḥrānī (d. 1299). Al-Ṭūsī's argument starts only here.

positive] attribute, namely the form that is impressed in the substance that is the subject of intellection, and corresponding to the quiddity of the object of intellection. For he said in the *Pointers* that the perception of something is the representation of the true reality of the object of perception in the perceiver. But then sometimes, he made [knowledge] come down to a mere relation, or an attribute that has a relation.

Then there was disagreement among those who said [knowledge] comes down to a mere relation. Some of them called this relation "connection (*taʿalluq*)," and introduced a further item that would imply this connection. This is the doctrine of those who deny "modes (*aḥwāl*)," a "mode" being the attribute of an existent that is itself described neither by existence nor by non-existence. Some of them said that knowledge is an existing attribute that yields "being knowledgeable (*al-ʿālimiyya*)," where "being knowledgeable" is a mode of that attribute which has connection to the object of knowledge. So these people introduce three items: firstly knowledge, which is an existing attribute, secondly "being knowledgeable," which is an attribute that is neither existent nor non-existent and which they called a "mode," and thirdly the connection related to this "being knowledgeable."

From among these doctrines, the Imām [sc. al-Rāzī] chose the view that [knowledge] is something relational, as you have learned; and he rejected the previous doctrines of the Master [sc. Avicenna].

[T59] Al-Samarqandī, *Ṣaḥāʾif*, 166. 8–12

[*perception is getting at a* maʿnā]

Furthermore, there must be in perception some faculty, through which the perceiver gets at (*yaṣilu*) the meaning (*maʿnā*) of the object of perception. Three things are established here: that faculty; the perceiver's getting at that meaning; the occurrence of this meaning for [the perceiver]. The faculty in question is the sensitive [faculty], in the case of sensory perception, and mental vision (*baṣīra*) in the case of psychological (*nafsī*) [perception]. Getting at something is perception. The occurrence is the representation of the true reality of the object of perception.

[T60] Al-Samarqandī, *Ṣaḥā'if*, 168.1–8

[*response to Abū l-Barakāt's view that the soul, not the organ, is the subject of perception*]

[It is argued that the soul, not the organ of sense-perception, is the subject because] when the soul turns to thinking and devotes itself to it, it does not perceive sensation, even though the object of sensation is still being encountered. [...]

[168.7] [*Response*]: in this case, the soul does not perceive the sensing of the sensitive [faculty], even though it does happen. This is why, when the sensing is stronger, the soul is turned away from thinking to [sensing].

[T61] Al-Samarqandī, *Ṣaḥā'if*, 166.1–2

[*against perception as occurrence of the object of knowledge*]

Perception is an attribute of the perceiver. But the fact that the true reality of the object of perception is represented, or the representation of its true reality, is an attribute of [the true reality], not of the perceiver. So how can you define one of them [i.e. the attribute of the perceiver] with reference to the other [i.e. the attribute of the true reality of the perceived object]?

[T62] Al-Samarqandī, *Ṣaḥā'if*, 172.4–15

[*perception as connection*]

Having established this, *we say*: we find within our own souls that they have a faculty through which true realities and features can be apprehended. When [that faculty] is connected [to an object of perception], meaning that the soul reaches it, perception happens. For instance, an observer apprehends things through vision, and when [vision] is connected to something, it perceives it. This faculty is mental vision (*baṣīra*), while the apprehending is thought (*fikr*). The first reaching is awareness, and its preservation intellection.

Some of them believed that knowing in the absolute sense is that faculty which comes to have relations and connections to the objects of knowledge, so as to become knowledgeable about those objects of knowledge. The Master [sc. Avicenna] alluded to this also, when he said that knowledge falls under the category of quality (*kayf*) essentially, but under the category of relation acci-

dentally. For instance, in respect of its essence vision falls under the category of quality, but when taken together with the relation to the object of vision[34] it belongs to the category of relation. However, you have learned that in fact, this faculty is the principle of knowledge, and knowledge is getting at something (*wuṣūl*), as has been established concerning perception. In which case knowledge belongs among the relations, though its principle is among the qualities.

[T63] Al-Urmawī, *Maṭāliʿ*, 27ʳ7–13

[*knowledge is a quality with a relation*]

When we know something, we find ourselves as knowing about it in a continuous state (*ḥāla*), which occurred after not yet being there. Whatever is like this is something existent, and it is a quality, because it is neither substance nor any accident other than quality. But this quality is not free from relation. So [knowledge] is a quality with a relation, this being one of the statements made by the Master [sc. Avicenna]. *If anyone says*: knowledge is the occurrence of a form which is separate from matter, for something else which is separate from [matter], then *I say*: this is ruled out by the fact that knowledge is something existing.

[T64] Ibn Kammūna, *al-Jadīd fī l-ḥikma*, 172.3–6

[*when perception happens through representation*]

There is a rule concerning the perception that must take place through the occurrence of the form of the perceived object in the perceiving subject: namely that this perception is not perpetual (*dāʾim*) for the perceiving essence as long as it exists, and that the perceived object is hidden from the perceiver, not "present" to it in the way that a visual object is present to vision, and whatever else goes like this.

34 Reading *al-mubṣar*.

[T65] Ibn Kammūna, *al-Jadīd fī l-ḥikma*, 173.14–17

[*correspondence requirement*]

Thus it has been refuted that the aforementioned perception is due to our being deprived of something. Therefore it is due to the occurrence of something in us. If that something does not correspond to the perceived object, then its being the perception of [that object] would be no more appropriate than its being the perception of anything else. So there must be correspondence (*muṭābaqa*), meaning that a trace (*athar*) in the soul occurs for each object of perception and is related to it, in such a way that the trace that is the perception of *this* is not identical to the trace that is the perception of *that*.

[T66] Ibn Kammūna, *al-Jadīd fī l-ḥikma*, 173.19–174.13

[*against perception as mere relation*]

Thereby it has become clear that perception is not just a relation between subject and object of perception. For [174] the relation will call for the existence of the relata: so if the perceived object is non-existent, there can be no relation to it. But if it is existent in itself or in something that is hidden from us, then there will have to be perception of it before our perception of it, unless it happens to be in itself or in the hidden thing except at the moment of perception, through a disposition that arises from the perceiver's turning attention to faculties or organs. There can be no doubt that this would be a case of making something present (*istiḥḍār*) to [the perceiver] after it was absent: so the perception would be nothing other than the presence of the object of perception. We confirm this by self-introspection (*min anfusinā bi-l-wijdān*), and it cannot be denied. If there is any room for disagreement, it concerns the making of the impression (*inṭibāʿ*), not sheer presence to the perceiver. But if [the perceived object] exists in us, then the impression has been already realized, never mind sheer presence. So on any assumption, perception is not just the aforementioned relation, even though it does necessarily belong to it. (And if perception [always] called for the existence of the object of perception in extramental reality, then no perception could be ignorance. For ignorance is the failure of mental forms to correspond to extramental true realities.)

[T67] Ibn Kammūna, *al-Jadīd fī l-ḥikma*, 180.1–5

[***perception applies analogically***]

"Perception" applies to its different types analogically (*bi-l-taskkīk*), since it admits of intensity and weakness. Don't you see that visual perception is stronger than perception by imagination, even though we have detailed perception of the perceived object by imagination, just as we do with vision? For [visual] observation additionally has "unveiling (*inkishāf*)," which is lacking in imagination. This is why imagining the object of love is not the same as seeing it, albeit that imagination varies in strength.

[T68] Ibn Kammūna, *Sharḥ al-Talwīḥāt*, vol. 3, 380.8–14

[***knowledge by presence through particular and universal forms***]

What is made present to the perceiver is either the perceived object itself, or its form. If it is its form, then whatever is perceived by means of that form will be either particular or universal. If it is particular, then it can be perceived only when that form occurs in the faculties that are present to the thing that has perception, such as soul's perception of the particular forms that occur in imagination. But if that which is perceived by means of that form is universal, then it can be perceived only through the occurrence of its form in the essence of the perceiver. This form cannot be impressed upon any body or anything corporeal, as you have learned. The object of perception is the present form itself, not anything extraneous to conceptualization. Even though one does say of that which is extraneous to conceptualization that it is "perceived," this is only by secondary intention.

[T69] Al-Shahrazūrī, *Shajara*, vol. 3, 474.16–476.5

[***mystical interpretation of knowledge as unification***]

The truth is that when they spoke of "unification (*ittiḥād*) with intelligible forms," or "with the Active Intellect," they meant the unification that has been indicated by the masters of separation and the Sufi masters. When the soul connects to some of the separate lights, in cases of stealing away from and leaving the body, then due to the power that attaches to it among intellectual delights, spiritual tastings, and intense luminary illuminations, it becomes hidden from itself and from its self-awareness, and the governance of separate intellectual lights overwhelms it, and at that stage it annihilates itself. They called this state

"unification." [475] When the wayfarer arrives at this stage and his weaker light is swallowed up within the stronger and more powerful light, and it becomes intoxicated with the pleasures of the governing lights (*al-anwār al-qāhira*); and the separate intellectual lights become the places of manifestation (*maẓāhir*) for the rational souls that are connected to them, then the soul that is in this state sees nothing but the place of manifestation alone. Hence it may then speak with the tongue of that place of manifestation, so that some of them have said: "I am the Truth" or "praise be to me" or "what is greater than I?" or "within this cloak is nothing but God."[35] [...]

[475.12] As for [unification with] the Active Intellect, [this is needed] because the soul is incapable of perceiving the intelligible forms [by itself], so that the light of the intellect sheds light upon the intelligible forms, and thereby they become separate from matter. And it [sheds light upon] the rational soul, so that it is thereby prepared to perceive those intelligible forms. Such is the intellectual illumination of the soul, the strength of the radiance cast upon it, the annihilation of its light within the light of the Active Intellect, and [the Intellect's light] overwhelms [its light]. This state is called "unification," because the weaker light becomes hidden within the stronger light, and no trace of the weaker [light] is left when the light of the Intellect overwhelms it.

As for the soul's unification with intelligible forms, whenever soul perceives the intelligible form it is turned away from itself and from its self-awareness, and from its perception of its own perception. Now it perceives nothing but that separate spiritual object of intellection, nothing else, as if it were hidden from itself [476] by being preoccupied with that intelligible. Because of the intimacy and the strength of the connection between the subject and object of perception, this perception has been called the "unification of the subject and object of intellection." This, or something close to this, is what the ancients meant—may God be pleased with them—by the "unification" they mentioned in [the context of discussing] perception. They did not however mean that two things become one in all respects. For no reasonable person could think this, let alone the divine philosophers (*ḥukamāʾ*) who were led by the illuminating lights and true inspirations.

35 Notorious assertions ascribed to mystics like al-Ḥallāj.

[T70] Al-Shahrazūrī, *Shajara*, vol. 3, 494.15–19

[***mystical experience is by presence too***]

When the visible object occurs in that which receives vision while there is no veil, then presence by illumination (*ishrāq ḥuḍūrī*) for this visible object arises for the soul, so that soul perceives it due to its presence, with no form or representation (*mithāl*) of it in the soul, and not through a universal form, but rather through an observable, particular form. The same goes for imaginative[36] forms and forms in dreams, and the forms all the lords of unveiling and tasting see; they do so through presence by illumination.

[T71] Al-Tustarī, *Muḥākamāt*, 44r14–17

[***doxographical account of Abū l-Barakāt's doctrine***]

Because the author of the *Muʿtabar* [postulated] the necessity for the making of an impression in perception, but affirmed that something large cannot be impressed in something small, he had to say that the perceiver for all objects of perception is the soul, and that it [perceives] without the mediation of organs. Rather those external and internal organs are not intermediates for perception but [only] to specify that one object is perceived rather than another. The perceiver is the soul, without any organ. He claimed that the objects of perception are impressed upon the soul itself, which implies no impressing of something large in something small.

[T72] Al-Ḥillī, *Asrār*, 554.5–7

[***ignorance can be explained using the form theory just as well as the relation theory***]

On this assumption, ignorance and knowledge only attach to the judgment concerning correspondence or the lack thereof, not to the forms [in the mind] themselves. So the form [itself] is neither knowledge nor ignorance, because for both there is a condition, namely correspondence or the lack thereof, respectively.

36 Emending *al-ḥāliyya* to *al-khayyāliyya*

[T73] Al-Ḥillī, *Asrār*, 555.9–556.1

[***magnitudes argument, with Al-Ṭūsī's solutions and responses***]

We can intellectually grasp the form of the heavens. How can this occur in the brain, given its small size?

It has been responded [*by al-Ṭūsī*]: because of the possibility that (a1) the form of the heavens may be impressed in the matter of the organ, or (a2) in the perceptual faculty that inheres in the organ. Being large or small does not apply to either of these. (b) Or [one may admit that] whatever is impressed is smaller in magnitude then the heavens, but this does not rule out the occurrence of equivalence, since large humans and small ones are equivalent in respect of the form of humanity.

I say: these possibilities are unconvincing. (a1) In the case of the possibility that the form of the heavens inheres in matter, because they deny that several magnitudes can inhere in one and the same matter. Otherwise it would follow that the matter has both magnitudes, so it would simultaneously be small and large, which is absurd. Besides, how can they make matter the subject of inherence for the form, despite the fact that the organ is a *body*, which is a composition of both matter and form? If one allowed this to exist, then there would be no need for a corporeal form anymore, as matter would be the organ. (a2) As for the possibility that the form inhere in a faculty, this too is unconvincing. For the faculty is an accident; so how can it alone be a subject of inherence? (b) As for the possibility that the form is smaller, yet equivalent in terms of the form taken absolutely, this too is unconvincing. For, [556] just as we intellectually grasp the form of the heavens, so we grasp its magnitude.

[T74] Al-Ḥillī, *Asrār*, 559.14–20

[***human knowledge of substance is an accident***]

There is a kind of knowledge that is a substance, and another kind that is an accident. The former is, for instance, the knowledge the intellects have about themselves, which just is themselves. The latter is, for instance, our acquired knowledge. If one makes mental forms to be cases of knowledge, then if they are taken insofar as they are existent in the mind, they are equivalent to extramental things, so some of them are substances and some accidents. But if one takes them as extramentally existent, then all of them are accidents that inhere in a subject—that is, in the intellect or the mind.

[T75] Al-Ḥillī, *Nihāyat al-marām*, vol. 2, 20.15–19

[***against al-Ṭūsī's solution to the double perception problem***]

The perceiver's organ is not the perceiver. But you have made perception to be the occurrence of the object of perception for the perceiver. How would the perceiver perceive thanks to the form of the perceived object occurring in something else [namely the organ]? Furthermore, if the form of the object of perception occurs for the perceiver as it does to his organ, then there would be two occurrences, so the occurrence of the form in the organ would not be needed. If however there is only the occurrence in the organ, then the perceiver should be nothing other than that in which this form has occurred.

[T76] Al-Ḥillī, *Nihāyat al-marām*, vol. 2, 25.4–7

[***grasping impossible things***]

Again, what is judged to be impossible is not the mental form, but rather that whose form it is. That quiddity has reality neither in the mind nor concretely. For we do not say that this mental form is impossible of existence in extramental reality. Otherwise there would remain no difference between the contingent and the impossible, as explained above. But the quiddity whose form this form is, is that which is judged to be impossible.

[T77] Al-Ḥillī, *Nihāyat al-marām*, vol. 2, 27.4–9

[***reply to al-Ṭūsī's solution to the becoming argument***]

[Al-Ṭūsī] said: heat does not require its subject of inherence to become hot unless that which inheres is in itself [heat], and the subject of inherence is a body lacking the opposite of [heat], and is such as to be acted upon in that way.

[This] is unconvincing. By "the hot" we mean simply that in which heat inheres. So if heat itself inheres [in the subject of inherence], then surely it is hot. If what inheres is the form of [heat], then if [the form] is equivalent to [heat itself] in all respects, then likewise [it will be really hot]. But if it is equivalent to [heat] only in a certain respect, then the true reality of heat will be known only in that respect, not in all respects.

[T78] Al-Ḥillī, *Nihāyat al-marām*, 29.11–30.1

[***knowledge needs to have a realized object***]

Whether intellection is relation between the knower and the object of knowledge, or a real attribute (*ṣifa*) whose true nature implies a relation, or a form in the knower that is equivalent to the object of knowledge, [on any of these options] one must posit something to which knowledge is connected. This [must be] realized in itself, not in the knowledge that needs that which has been posited to be realized. Otherwise there would no longer be any difference between true and false judgements about that which lacks existence in extramental reality. For instance, we say "a companion to God is impossible" and "body is impossible." Therefore, the object of knowledge—whatever it may be—must be realized in the facts themselves (*nafs al-amr*), if knowledge is to be connected to it appropriately. Here one should inquire into how one should understand the difference between that which holds in the facts themselves, and that which holds in extramental reality. But we will speak about this further below, God willing.

[***hidden bodies and forms in the intellect could both serve this role***]

The implausible [suggestion] that the perceived form is in a hidden body is out of place [here]. For the verifiers among the ancients believed the [forms] are real in the Active Intellect. What is the difference between the two proposals, apart from the fact that [30] the body, unlike the intellect, has a [spatial] position?

[T79] Al-Ḥillī, *Nihāyat al-marām*, vol. 2, 35.7–16

[***on al-Ṭūsī's critique of the relational account***]

Just as [knowledge defined as] relation would call for two real relata, so does [knowledge defined as] form. For it also has a relational aspect: it is a form of that which has the form; it provides information about it; and is equivalent to it. Equivalence [between the mental form and the object of knowledge] presupposes that they are two different things, and are distinct. But if the quiddity is in the mind, it follows that it will be related to itself. And because whatever is in the mind follows upon that which is in extramental reality, or among the facts themselves, intellection cannot be related to that which follows. So whatever [al-Ṭūsī] tried to force upon [the proponents of defining knowledge as relation] with regard to the two, will equally be forced upon him.

Also, we reject his explanation of ignorance in what has been mentioned. Rather, "ignorance" means the lack of a correspondence between knowledge and the object of knowledge. If you take relation to something in a way that does not correspond [to that thing], it will be ignorance. In the case of the non-existent object of knowledge, there is no need for there to be a difference between two kinds of things, in order that one may ask about its specific properties.

This being established, knowledge, perception, and awareness consist in true forms, which imply a relational state that exists only when two relata exist.

CHAPTER 16

Self-Knowledge

Avicenna's remarkable claim that humans are permanently self-aware of themselves has attracted the attention of numerous scholars.[1] For Avicenna, self-awareness is in the first instance a tacit phenomenon: we are aware of ourselves even if we are not actively directing attention to ourselves, and even when asleep. This idea really caught the imagination of thinkers in the following centuries. It was taken up by Abū l-Barakāt al-Baghdādī, who agreed with Avicenna that a primary "perception" of the self underlies all other cognitions [T11, T13], it is just that we do not always attend to this perception we have of the self. Al-Suhrawardī and thinkers strongly influenced by him also emphasized the immediate intuition we have of our own selves, which licenses the claim that the self is a "pure light" because the self is evident to itself, and light is that which is evident [T27, T40, T41]. Again this does not mean that we are always actively aware of ourselves, but rather that our self-awareness can come to our attention with a "bare reminder" as Ibn Kammūna puts it [T36]. This is set out in a famous passage recounting al-Suhrawardī's dream of meeting Aristotle [T24].

Thinkers in our period also devoted intense discussion to the topic of *active* self-awareness, variously referred to in the texts below as "self-intellection," "self-knowledge," and "self-perception." This is the kind of cognition one has of oneself when one is not merely awake, but alerted to oneself as an object of cognition. The importance of this phenomenon lies in part with the fact that Avicenna described self-knowledge as our most godlike activity. As is clear from

1 More recent studies include P. Adamson and F. Benevich, "The Thought Experimental Method: Avicenna's Flying Man Argument," *The Proceedings of the American Philosophical Association* (forthcoming 2018); D.L. Black, "Avicenna on Self-Awareness and Knowing that One Knows," in S. Rahman et al. (eds), *The Unity of Science in the Arabic Tradition* (Dordrecht: 2008), 63–87; H. Eichner, "'Knowledge by Presence,' Apperception and the Mind-Body Relationship: Fakhr al-Dīn al-Rāzī and al-Suhrawardī as Representatives and Precursors of a Thirteenth-Century Discussion," in P. Adamson (ed.), *In the Age of Averroes: Arabic Philosophy in the Sixth/Twelfth Century* (London: 2011), 117–140; A. Hasnawi, "La conscience de soi chez Avicenne et Descartes," in J. Biard and R. Rashed (eds), *Descartes et le Moyen Âge* (Paris: 1997), 283–291; L.X. López-Farjeat, "Self-Awareness (*shuʿūr bi-al-dhāt*) in Human and Non-Human Animals in Avicenna's Psychological Writings," in A.G. Vigo (ed.), *Oikeiosis and the Natural Bases of Morality: From Classical Stoicism to Modern Philosophy* (Hildesheim: 2012), 121–140; and J. Kaukua, *Self-Awareness in Islamic Philosophy: Avicenna and Beyond*, (Cambridge: 2014). See also our chapters on Personal Identity and the Immateriality of Soul in our volume on Physics and Psychology.

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[T4, T5], he draws an explicit parallel between human and divine self-thinking, because in both cases "intellect, intellecting, and intelligible" coincide. The ultimate source of this doctrine is Aristotle, who states that the human mind can be its own object (*On the Soul* 3.4, 430^{a}2–3). Aristotle's point is apparently nothing to do with a permanent yet tacit self-awareness that can intermittently be made active, such as we find in Avicenna. Instead he alludes to the way that one can grasp oneself as the subject involved in the grasp of something else. Thus if the mind understands *triangle*, the mind can also cognize itself as that which is understanding *triangle*.[2] If this is right, the operation described by Aristotle is parallel to the way that one can use the sense power to, for instance, be aware that one is seeing (*On the Soul* 3.2, 425^{b}12).

Famously, Aristotle also stated that God is a self-thinker [T1], an idea that had been rejected by Plotinus and some thinkers of the Islamic world, like al-Kindī, but was accepted by al-Fārābī, who already applies the formula "intellect, intellecting, and intelligible" to God [T2]. His colleague in the Baghdad Peripatetic school, the Christian Aristotelian thinker Yaḥyā ibn ʿAdī, used this as a philosophical justification for the doctrine of the Trinity [T3]. Al-Shahrastānī tries to embarrass Avicenna by pointing out the similarity [T9], which provokes al-Ṭūsī to the pointed response that the Ashʿarites are even worse, since they accept an even higher number of divine attributes distinct from God's essence [T35].

On what basis can we be sure that God is indeed a self-thinking intellect, and not transcendent beyond all cognition as Plotinus had claimed? For Avicenna the answer is simple: God is immaterial [T6, in agreement with al-Fārābī in T2]. This implies self-thinking because it is matter that prevents things from engaging in intellection, and from being suitable objects of intellection.[3] As Ibn al-Malāḥimī and al-Rāzī explain [T8, T16], on this account the immaterial is "present" to itself because with no matter involved there is nothing to inhibit that presence, the way that a wall might stop something from being available to visual perception. Al-Masʿūdī points out a problem here, though, which is that if this line of reasoning were correct then it is hard to see why self-awareness is usually only tacit: we are always present to ourselves, but not always actively grasping ourselves [T14, T15]. Al-Ghazālī had already made a similar point, namely that self-thinking cannot be identical to the self-thinker, as Avicenna claims, because active self-knowledge is intermittent whereas the

2 Avicenna thinks this too and will be followed in this by Abū l-Barākāt, as we will see below, but the point is that Aristotle seems to think that one is *only* self-aware insofar as one grasps oneself as the subject of a cognition, whereas Avicenna also seems to believe we can have the self as a simple object of awareness or intellection.

3 See further our chapter on God's Knowledge in our volume on Metaphysics and Theology.

knower is obviously not only intermittently identical to him- or herself [T7]. But in [T23] al-Rāzī offers a spirited defense of the idea that it is tacit, not active, self-awareness that is the result of presence to the self, and offers considerations in support of the claim that tacit self-awareness is indeed perpetual.

The case of active self-intellection, whether human or divine, involves a further difficulty: how can it be that in such a case the knower is truly identical with the known?[4] As al-Shahrastānī observes, one cannot just substitute the word "intellection" for the phrase "separate from matter" as if these were the same [T9], and al-Rāzī makes the same point concerning the three elements of Avicenna's formula "subject of intellection," "intellection," and "object of intellection": these are not synonymous [T22]. Al-Ṭūsī gives a correct response at [T35], namely that terms may be intensionally distinct but coincide in their extension. Just as "morning star" and "evening star" are not synonymous expressions but both refer to Venus, so "intellect" and "object of intellection" mean something different and even usually refer to different things (as when I grasp *triangle*, which is not the same as me), but in the unusual case of self-knowledge coincide.

In our period this idea is expressed with a different technical term, "aspect (*iʿtibār*)." To think of God as intellect, intellecting, and object of intellection is not to impute any multiplicity to Him—as the Christians do—but just to consider Him as a self-knower from three different "aspects" or points of view. Al-Ṭūsī uses the idea to explain the difference between the way God relates to Himself and the way He relates to other things: the difference between knower and known can be merely intensional, whereas creator and created must be extensionally distinct [T34]. The "aspects solution" was also used to deal with the problem mentioned at [T18], namely that if knowledge is a relation between knowledge and known then self-knowledge is impossible, since relations require two distinct relata. In [T19] al-Rāzī says that the "aspect solution" is no answer to this difficulty, because it is the presence of a relation that makes it possible to distinguish the two aspects "knower" and "known," not the other way around. The difficulty is dismissed by al-Āmidī on different grounds. He points to a very simple case of "relation," namely the genitive *iḍāfa* construction [T29]. Again, this usually does imply distinctness (as in "her brother") but it need not ("her self"). Al-Rāzī also makes this point in [T17].

Al-Rāzī poses further puzzles in [T20]. First, if I take myself on as an object of cognition, then aren't two exactly similar things (namely me and myself!)

4 For this problem see P. Adamson, "The Simplicity of Self-Knowledge After Avicenna," *Arabic Sciences and Philosophy* 28 (2018), 257–277.

co-present? This looks to violate the principle that identical things are indiscernible, and it would seem that neither of the two has a better claim to be the subject of the knowledge as opposed to the object. To this al-Āmidī responds that there is a difference between the self as subject of knowledge, which is a concrete entity, and the self as an object of knowledge, which is a conceptual or intelligible item [T30]. A different answer is given by al-Abharī in [T32]: it is the person who perceives, the person's quiddity that is perceived. That obviously gives us the asymmetry needed to explain why one is subject, the other object. In fact al-Rāzī himself had sketched this solution too, and in at least one passage accepted it as an account of how God can know Himself [T20, T21]. For a summary and critique of this position, as well as the aspect solution offered by al-Ṭūsī, see al-Ḥillī's remarks in [T42].

A second, and rather clever, puzzle is this: how will the self-knower be sure that what she is grasping is really herself? To do this she would apparently need already to have self-knowledge [T20; see also T26]. Here it could help to return to the idea that self-knowledge is much more intimate procedure than the one involved in knowing something else, as captured in the slogan that it occurs when something is "present" to itself. We should remind ourselves that the issue of self-knowledge is often discussed in the context of the debate on the nature of knowledge and perception. As discussed in the previous chapter (Knowledge and Perception), Avicenna's general epistemology suggests that we know a thing by taking on a representation (*mithāl*) or form (*ṣūra*) of that thing in the mind. Some authors think the nature of self-knowledge actually shows that Avicenna's representationalist epistemology is wrong [T14, T20]. For instance, al-Abharī claims that self-knowledge cannot really involving having a "representation" of oneself: rather the knowledge just is the presence (*ḥuḍūr*) of the knower [T33]. But al-Rāzī reformulates Avicenna's position to reach a similar result. Knowledge as such is the mere presence of something to an immaterial subject. It may be a separate form that is present to the knower on the representationalist account, but it can also be just the immaterial subject itself, without any additional form [T16]. Al-Āmidī too admits that self-knowledge is not representational but gets out of the problem differently, by saying that knowledge is an attribute that belongs to the knower [T28]. Thus he makes space for distinct relata in the case of self-knowledge, where the relation is not between the knower and a representation of the knower but the knower's knowledge and the knower herself.

For a sustained critique of representationalist accounts of self-knowledge, one should look to the passages in al-Suhrawardī and his commentators gathered below [T24, T25, T26, T37, T38, T39]. For them, we know ourselves through the sheer presence of ourselves to ourselves. This is the occasion for an interest-

ing treatment of indexicals, in which it is pointed out that a term like "I" or "it" can be applied to many different things. As al-Suhrawardī puts it, "the meaning of 'I' does not exclude that sharing occurs": just as many horses fall under the general concept *horse*, so many selves fall under "I" when taken as a general concept. In light of this, self-knowledge cannot involve grasping oneself though representations since these are in principle applicable to many things.

Finally it should be noted that not all thinkers in our period took self-knowledge to be so readily available, a matter of mere introspection. Bābā Afḍal evokes a position more like that of late ancient Neoplatonism by suggesting that the true self is indeed hidden from most of us, since it is our fully realized intellect [T31]. On this view, true self-knowledge—and hence godlikeness—lies at the end of the arduous process of coming to know all other things.

Texts from: Aristotle, al-Fārābī, Yaḥyā ibn ʿAdī, Avicenna, al-Ghazālī, Ibn al-Malāḥimī, al-Shahrastānī, al-Sāwī, Abū l-Barakāt al-Baghdādī, al-Masʿūdī, Fakhr al-Dīn al-Rāzī, al-Suhrawardī, al-Āmidī, Bābā Afḍal, al-Abharī, al-Ṭūsī, Ibn Kammūna, al-Shahrazūrī, al-Ḥillī.

[T1] Aristotle, Met. Λ.7, 1072^{b}.19–24 [trans. Ross]

[*Aristotle on divine self-knowledge*]

And thought in itself deals with that which is best in itself, and that which is thought in the fullest sense with that which is best in the fullest sense. And thought thinks itself because it shares the nature of the object of thought; for it becomes an object of thought in coming into contact with and thinking its objects, so that thought and object of thought are the same. For that which is *capable* of receiving the object of thought, i.e. the substance, is thought. And it is *active* when it *possesses* this object. Therefore the latter rather than the former is the divine element which thought seems to contain, and the act of contemplation is what is most pleasant and best.

[T2] Al-Fārābī, *Mabādiʾ*, 70.1–72.6 [trans. Walzer, mod.]

[*three aspects of divine self-awareness*]

Because the First is not in matter and has itself no matter in any way whatsoever, it is in its substance actual intellect; for what prevents the form from being intellect and from actually engaging in intellection is the matter in which a thing exists. And when a thing exists without being in need of matter, that

very thing will in its substance be actual intellect; and that is the status of the First. It is, then, actual intellect. The First is also intelligible[5] through its substance; for, again, what prevents a thing from being actually intelligible and being intelligible through its substance is matter. It is intelligible in virtue of its being intellect; for the One whose identity (*ipseitas*) is intellect is intelligible by the One whose identity is intellect. In order to be intelligible the First is in no need of another essence outside itself which would intellect it but it itself intellects its own essence. As a result of its intellecting its own essence, its becomes actually intellecting and intellect, and, as a result of its essence engaging in intellection of it, it becomes actually intelligible. In the same way, in order to be actual intellect and to be actually intellecting, it is in no need of an essence which it would engage in intellection and which it would acquire from the outside, but is intellect and intellecting by its own essence. For the essence which is the object of intellection is the essence which is the subject of intellection, and so it is intellect by virtue of its being intelligible. Thus it is intellect and intelligible object and intellecting, all this being one essence and one indivisible substance—whereas the human, for instance, is intelligible, but what is intelligible in his case is not actually but potentially object of intellection; he becomes subsequently actually an object of intellection after the intellect has engaged in intellection of him. What is intelligible in the case of man is thus not always the subject which intellects, nor is, in his case, the intellect always the same as the intelligible object, nor is our intellect intelligible because it is intellect. We think, but not because our substance is intellect; we think with an intellect which is not what constitutes our substance; but the First is different; the intellect, that which engages in intellection and the intelligible have in its case one meaning and are one essence and one indivisible substance.

[T3] Yaḥyā Ibn ʿAdī, *Fī l-tawḥīd*, 21.6–22.3

[*three aspects of divine self-knowledge and trinity*]

It has become clear that there is a comparison between intellect, intellecting, and object of intellection on the one hand, and Father, Son and Holy Spirit on the other, insofar as the substance of the intellect is the essence (*dhāt*) of that which is intellecting and the essence of the object of intellection, given that

5 Though the English word "intelligible" can mean that which is merely a potential object of intellection, we use it in our translations in what follows to mean the actual object of intellection (on the grounds that "intelligized," preferred by Walzer, is simply too rebarbative).

the object of intellect is a single essence with the intellect. They are not multiple with regard to essence, and they are just described with three attributes (*ṣifāt*) each of which is distinct from the other two. So this essence is rendered multiple with regard to its three attributes, not in respect of its essence.

[T4] Avicenna, *Shifāʾ, Nafs*, 239.7–10

[***soul's self-knowledge as opposed to knowing others***]

The soul conceives itself, and its conceiving itself makes it intellect, intellecting, and object of intellection (*ʿaql, ʿāqil, maʿqūl*). But its conceiving these forms does *not* make it like this, because in its being substance in the body, it is always potential intellect, even if it becomes actual with respect to some things.

[T5] Avicenna, *Shifāʾ, Ilāhiyyāt*, 285.5–13 [trans. Marmura, mod.].

[***three aspects of divine self-awareness***]

Hence, that which is free of matter and [its] attachments [and is] realized through existence separate [from matter] is an intelligible for itself. Because it is in itself an intellect, being also intellectually apprehended by itself, it is its own intelligible (*maʿqūl dhātihi*). So its self is intellect, intellecting, and intelligible (*ʿaql, ʿāqil, maʿqūl*). Not that there are not multiple things here, since, inasmuch as it is a being (*huwiyya*) bare [of matter], it is intellect. Inasmuch as it is considered in light of the fact that its being is in itself bare [of matter], it is its own intelligible. Inasmuch as it is considered in light of the fact that its self has a being that is bare [of matter], it is intellecting itself. For the intelligible is that whose quiddity, bare [of matter], belongs to a thing [as the object of intellection]; and the intellecting is that which possesses a quiddity bare [of matter] that belongs to a thing. It is not a condition for this thing to be it itself or something else, but to be a thing in a non-restricted sense. And the thing in a non-restricted sense is more general than it or another.

Thus the First, with respect to (*bi-iʿtibār*) having a quiddity bare [of matter] that belongs to a thing, is intellective. And with respect to [the fact] that His quiddity bare [of matter is an object of knowledge] for some thing, He is an intelligible. This thing is His self. He is thus intellecting in that He has the quiddity bare [of matter as the object of knowledge] for some thing, this [thing] being His essence, and an intelligible in that His [own] quiddity bare [of matter is the object of knowledge] for some thing, this [thing] being His essence.

[T6] Avicenna, *Ishārāt*, 275.11–13

The First is the object of intellection for Himself (*maʿqūl al-dhāt*) and what subsists for Himself. For He subsists free from attachments, lacks, or materials, and anything else that would bestow an addition onto the essence. And you know that what is like this intellects itself and is intellected by itself.

[T7] Al-Ghazālī, *Tahāfut al-falāsifa*, 108.4–13 [trans. Marmura, mod.]

[***self-knowledge is identical neither to God's self nor the human self***]

If you say that [His self-knowledge] is identical to Him, then what is the difference between you and one who says that a human's self-knowledge is identical to his self? This is folly. For one may suppose the existence of his self while he is in a state of being oblivious to his self, and then his obliviousness ceases and he is alerted to his self; thus his awareness of his self is doubtless not his self. […] [108.11] The fact that the First is eternally self-knowing does not show that His self-knowledge is identical with He Himself. Supposition can go so far as to posit [His] self and then the arising of [self-]awareness. If the latter were identical with He Himself, then this supposition could not be conceived.

[T8] Ibn al-Malāḥimī, *Tuḥfa*, 73.10–12

[***immateriality and self-awareness***]

They say: the only reason a person knows himself is that he is separate [from matter] and is not hidden (*ghāʾib*) from himself, such that he would need the presence (*ḥuḍūr*) of a form or an image of him in himself, in order to know himself. Rather he is present himself to his self (*nafs*), and is not hidden from himself (*dhāt*), and thus he is knowing of himself.

[T9] Al-Shahrastānī, *Muṣāraʿa*, 72.2–73.9 [trans. Mayer, mod.]

[***three aspects of self-awareness still involve multiplicity***]

You [sc. Avicenna] stipulated three notions (*iʿtibārāt*) [sc. intellect, intellecting, and intelligible] in the essence (*dhāt*) of the Necessary Existent, and explained each notion with its own meaning, none of which is understood from the others. This is patent Trinitarianism—exalted be God above being the third of three! This is no slander. Rather, it follows from asserting multiplicity of His

essence in respect of one notion and another, just as it follows for the Christians in respect of one hypostasis (*uqnūm*) and another.

His excuse for this notional multiplicity, on the basis that no duality is implied in [God's] essence, is of no avail to him. For the point on which his excuse rests, such that duality (that is, the arising of two things) would be avoided—namely that [God] has a separate quiddity, which is His essence, and that His separate quiddity belongs to Him—removes the very point that would give rise to a multiplicity of notions in His essence. So why does he posit them as three notions, and then remove them [73] with this explanation, just as the Christians lay down a Trinity of divine hypostases but then remove it by making [Him] one in substantiality, saying "one in substantiality, three in hypostases"?

With this "clarification" Avicenna only added one problem on top of another. For he included the term "quiddity" in it, so he made out that He has an existence *and* the quiddity of an existence which must be separate in itself, and its being separate is its intellection, while its intellection is its [act of] origination. If then existence, quiddity, separateness, intellection, and origination are synonymous expressions, allow that one of them may stand in the place of another, saying that separateness is intellection and intellection is origination, therefore separateness is origination! Or, if the expressions are distinct, allow that each expression signifies an idea which the other expression does not signify—and that is multiplicity!

[T10] Al-Sāwī, *Muṣāraʿat al-Muṣāraʿa*, 126^{v}6–127^{r}8

[***self-awareness does not imply multiplicity***]

The demonstration that whenever anyone intellectually grasps himself, his self-intellection is not additional to himself, is as follows. As we have mentioned, intellection is the inscription (*irtisām*) of an intelligible form in the essence of the intellecting. If, however, the intelligible is the essence of the intellecting, then his form is [already] occurring, so that he does not need it to be inscribed in him once again. Otherwise, it would imply [127^{r}] the occurrence of two things with no difference either in true reality or in something extrinsic to them in terms of accidents and attachments, but this is absurd. When we turn to our self-awareness (*shuʿūrinā bi-dhātinā*), we find in ourselves no repetitive inscribing of our true reality or our quiddity in ourselves, so that we would be aware of a numerical distinction between them. Everyone who intellectually grasps himself must be aware of himself in the same way as we are. And, once it is established that he intellects himself, and his intellect is his self (*dhāt*), not

additional to himself, being intellect, intellecting, and intelligible with no multiplicity arising on the basis of these attributes (*ṣifāt*), he is thus intellecting in virtue of the aspect (*bi-iʿtibār*) that he has a separate quiddity which is his self.

[T11] Abū l-Barakāt, *Muʿtabar*, vol. 2, 359.24–360.4

[***self-awareness accompanies acts of cognition***]

It remains that self-perception resembles [360] sensory and intellectual perceptions. Given that in all these cases the perceiver is the single soul of the person, as we said, it is [that single soul] that perceives itself, and [perceives] that it is perceiving in each case of perception along with each perception. Thus in seeing or hearing it is aware of itself, and of its vision and hearing, and aware that it sees and hears. For the person is aware of himself through himself in all his voluntary acts and perceptions.

[T12] Abū l-Barakāt, *Muʿtabar*, vol. 3, 90.20–24

[***self-awareness does not boil down to the presence of the self***]

We are aware of ourselves, and know that the soul is cognizant of itself, at one time paying attention to itself along with other things of which it is cognizant, at other times paying no attention [to itself] along with other things. The case here is as with other objects of memory in that they may come to the attention or not. One cannot say that, whenever [the soul] pays attention to itself, its self is present to itself, but when it does not pay attention it is not present to itself. Rather, it is stored away (*makhẓūna*) in its storehouse.

[T13] Abū l-Barakāt, *Muʿtabar*, vol. 3, 92.2–7

[***intermittent self-awareness***]

The person is aware of himself along with every pleasure and pain, knowledge, cognizance, perception, and consideration that proceeds from himself, whenever he is considering his state and activity. If this were not so, then he would not be aware of his pleasure of anything more than that it is pleasure. As for [the awareness] that it is his pleasure, this is his awareness of pleasure as well as of what feels pleasure. The same applies to pain and what feels pain. This is the conclusion of inquiry and confirms the soul's awareness of itself and obliviousness of itself when preoccupied with things other than itself, paying

attention to itself at one time and not at another, due to its preoccupation with objects of attention other than itself, and likewise it may be preoccupied away from what is in its self and with itself.

[T14] Al-Masʿūdī, *Shukūk*, 212.16–214.6

[***self-awareness is not representational and involves no duality***]

One proof that perception is something other than encounter (*mulāqā*) and representation is that we perceive ourselves, that is, our perceiving faculty, which is the true reality of our souls and is knowledgeable concerning the true realities of things, knowing their essences and being aware of them. Yet it is absurd that the form of us ourselves should be inscribed in ourselves. If a [213] form corresponding to the form of our soul is established in the substance of our soul, then two forms for it would occur together, but you have learned that [for instance] two blacknesses cannot occur together in a single subject. Now if the true reality of perception is such inscribing and encounter—which can be understood to occur only between two things—but there is no duality here, then there is no inscription, encounter, awareness, and perception either. Yet awareness and perception do occur. Hence the true reality of awareness and perception is not the true reality of inscribing and encounter.

[***presence and self-awareness***]

If someone says: the encounter between the perceiving faculty and the perceived thing is perception, because the thing is occurring and present to the perceiving faculty at the moment of contact, being witnessed by it and not hidden. And the [perceived] thing is closer to itself than anything that is not present to it. So our knowing faculty is closer to itself than anything else that is present to it. It is constantly present to itself and not hidden from itself. Given that something else may be present [to the knowing faculty] when perceived by it, it is still more fitting that it itself [will be present to itself]. Inscription and encounter are the presence of something, and our souls are present to our souls, not hidden from them. Such presence is perception even though there is no duality or difference. […]

[***non-perpetuity of self-awareness***]

[213.15] *We say*: If this were true, then our self-awareness would be constantly occurring in actuality. For, given that encounter and presence are occurring in actuality, awareness should be occurring in actuality too: if they were constant, it would be constant, while if they take place at a certain time, awareness

would occur at that time. Our self-awareness, however, is not constant in actuality. Rather, sometimes it is actual, but sometimes it is in potentiality, though close to actuality. [214] There can be no doubt about this. For someone who is asleep or in a faint is not aware of himself. Even most of the time while one is awake, one is oblivious of oneself without awareness of oneself in actuality, especially when one is occupied by some other thought, turning one's attention to an intelligible or sensible object, inquiring into it and nothing else. That, however, to which attention is not directed is known only in potentiality and not in actuality. If our knowledge of ourselves were identical to our presence (*ḥuḍūr*) to ourselves, our knowledge [of ourselves] would be constant, given that our selves are present constantly in actuality. Since that's not true, it is known that awareness is something beyond presence and encounter.

[T15] Al-Masʿūdī, *Shukūk*, 214.7–215.6

[*the distinction between self and self-knowledge*]

Another proof is that each of us knows himself, knows that he knows himself, knows that he is knowing the knowledge that he has of himself, and so on to infinity. Obviously self-knowledge is not the same as knowledge of self-knowledge. In one of these two cases the known is the self, in the other the knowledge of the self. Evidently, these cases of knowledge are potential, not in actuality for us, and we may make them actual whenever we want. When we do this, which kind of encounter and presence arises there after not having existed previously?

The point becomes clearer still in the following way. It is entailed by your doctrine that if one of us knows himself, the knower, what is known, and the knowledge would be one and the same thing, which would be the true reality of his rational intellectual soul. But when he knows that he knows himself, this knowledge is different from the first knowledge. What is known in this second knowledge is the first knowledge, but the first knowledge [according to you] is the same as [the knower] himself. Thus what is known in this second knowledge is he himself. Yet the knower, what is known, and the knowledge in the second knowledge is the very same knower, known, and knowledge involved in the first knowledge. So whenever self-knowledge occurs in actuality, knowledge about knowing himself would necessarily have to occur too, since all of them come down to one and the same thing, which is himself. [215] But a single thing can be in a certain state either in potentiality or in actuality. We say then that these cases of [second-order] knowledge belong to us in potentiality, not in actuality, just as we said that we occur to ourselves in potentiality and not

in actuality. Thus the falsehood of this statement [that self-knowledge is presence though inscription and encounter] is evident. In fact, self-knowledge is different from the true reality of the self. Instead it is something that belongs to ourselves insofar as we are knowers and relates (*amr iḍāfī*) to ourselves insofar as we are what is known. And the knowledge that one knows oneself is something that relates the self to the former relative item [sc. first order self-knowledge], not to the self. Hence what is known in the second knowledge is different from the known in the first knowledge.

[T16] Al-Rāzī, *Maṭālib*, vol. 3, 119.17–120.17

[***immateriality and self-awareness***]

God, may He be exalted, is self-knowing. The proof for this is that He, may He be exalted, exists [120] as self-subsistent and separate from matter; whatever is like this must be self-knowing. The first premise has already been established. The second premise, namely that everything that is self-subsistent and needs no matter must know itself, it can be proved to be correct with two arguments.

The first is as follows. It has already been established that knowledge just means for the quiddity of what is known to be present (*ḥuḍūr*)[6] to the knower. When one separate quiddity is present to another, then a self-subsistent quiddity will come to know this thing. This being established, we say that when something is self-subsistent, the true reality of its existence is not present to anything else; rather, its true reality is present to itself. Thus since the presence of one separate quiddity to another requires that this self-subsisting existent is knowing, and given that the true nature of this thing is present to itself, it must be that this thing is self-knowing, which was the conclusion sought.

The second is as follows. There is no doubt that each of us knows himself. We have already explained that knowledge is just the presence (*ḥuḍūr*) of the quiddity of what is known in the knower. So if we know ourselves, then this is either due to a form equal (*mutasāwiyya*) to ourselves being present to ourselves, or due to our own selves being present to ourselves. The former is false, for it implies the co-occurrence of indiscernibles, since neither of them differs [from the other], nor does the second more appropriately inhere in the first rather than vice-versa. As this option is false, it has been established that our knowledge of ourselves is nothing but the presence of ourselves to ourselves.

6 All verb forms in this passage may be derived either from *ḥ-ḍ-r* (to be present) or *ḥ-ṣ-l* (to occur), which look similar in Arabic script and are thus easily confused in manuscripts; either way the same root is presumably used throughout. The philosophical sense on both readings remains almost the same.

[T17] Al-Rāzī, *Maṭālib*, vol. 3, 121.7–11; 122.4–7

[***self-awareness and representational knowledge***]

Suppose we agree that the presence of one abstract quiddity to another[7] abstract quiddity is knowledge itself. Still, why do you say that the essence of something is present to itself? To explain: the presence of one thing to another is a specific relation between the two of them. Yet the occurrence of relation has as a precondition the difference between one entity and another. If there is no distinction, one cannot judge that something is present to itself.

[122.4] Everyone knows necessarily that it is correct to say "my self (*dhāt*) is such-and-such" or "your self is such-and-such," so that one's self (*dhātuhu*) is being related to itself (*nafsihi*). This shows that something can be related to itself (*ilā nafsihi*). If this is possible then one can say that this object (*dhāt*) is present to itself (*ʿinda nafsihā*).[8]

[T18] Al-Rāzī, *Maṭālib*, vol. 3, 139.4–7

[***knowledge requires a distinction between the knower and the known***]

Some people said that God, may He be exalted, is [not][9] self-knowing. They argued for this by saying that something's knowledge of something is a certain relation between the knower and the known. The occurrence of relation has a precondition the occurrence of distinction. Relation cannot occur in one thing in one and the same respect. Hence, He cannot be self-knowing.

[T19] Al-Rāzī, *Mabāḥith*, vol. 1, 462.3–13

[***aspects solution and its rejection***]

Some of them said that knowledge belongs to the class of relational items. If a single essence (*dhāt*) is taken with respect to two different attributes, it would be tantamount to two essences with regard to the relations that may correctly be realized for it. The essence insofar as it is knowing is different from

7 Deleting *ḥuḍūr* which is found in only one ms.

8 Although this argument is introduced as one of al-Rāzī's typical "one should not reply"-arguments, in lines 16–18, al-Rāzī seems ultimately to accept it.

9 The grammar of the sentence makes it clear that a negation (e.g. *bāṭil*) is missing from the sentence.

the essence insofar as it is known. Thus relation can certainly be realized for a single essence when those two aspects are different.

One may reply: the two aspects due to which relation can be realized must essentially precede the realization of that relation. However, something's being both knowing and known are two relational attributes derived from the realization of knowledge. For, as long as knowledge does not occur, the attribute "knowing" does not occur to the essence, nor does the attribute "known" to that which is known. Hence, the attributes of "knowing" and "known" are essentially posterior to the reality of knowledge. Yet knowledge is a relational attribute, posterior to both aspects in terms of which the occurrence of that relation is possible. If one settles the two aspects as "knowing" and "known" then they must be posterior to themselves twice over. This is absurd.

[T20] Al-Rāzī, *Mulakhkhaṣ*, 118^{r}12–118^{v}10

[***problems for Avicenna's account of self-awareness***]

As for the theory that [knowledge] is equivalent to the occurrence (*ḥuṣūl*) of the quiddity of the known to the knower, [self-knowledge is a problem] because if what occurs to the agent of intellection is other than himself [self-knowledge] is undermined, for two reasons. *First*, because this other thing must be equal to what is known in the perfection of its quiddity. But then would follow the co-occurrence of indiscernibles. Besides which, it is not more appropriate for either of them to be the intellect while the other is the object of intellection, than the other way around. *Second*, because when the knower knows that that form is equal to himself, his self-knowledge occurs before the occurrence of that form; or he does not know this, but then he is not self-knowing. But if [what he knows] is the same as himself, then something is related to itself [which is impossible]. [...]

[***a possible response***]

[118^{v}1] [Response on behalf of Avicenna:] Even if we conceded that there must be distinction, still every individual is additional to his specific quiddity (whose conceptualization does not in itself rule out that things share in it) through an additional qualification (*qayd*). So there are two qualifications here, and one and the same entity is composed out of them. If we make the subject of intellection to be the composite (*majmūʿ*), whereas the object of intellection is one of the two qualifications, then there is distinction. It is in this respect that I can say: myself and yourself. [...]

[118v8] This excuse concedes that this composite is knowing each of its parts. But then it is not knowing itself, but rather each of its parts. As for being self-knowing, the problem remains.

[T21] Al-Rāzī, *Maṭālib*, vol. 3, 140.13–16

[*accepts the possible response from T20 for the self-awareness of God*]

As for the objection which they mentioned, the answer is that we have shown that God's essence (*dhāt*)—may He be exalted—is concrete (*muʿayyana*). For whatever is like this, there is quiddity, concretization, and a union (*majmūʿ*) of the quiddity with that concretization. So in this way distinction arises, which suffices for the possibility of the occurrence of association and relation for that essence.

[T22] Al-Rāzī, *Nihāyat al-ʿuqūl*, vol. 2, 161.3–162.3

[*the aspects solution*]

He says: This thing when taken under a certain aspect is the subject of intellection, but the object of intellection when taken under a different aspect. *Our response*: If the meaning of these aspects were the same, then the expressions "subject of intellection," "intellection," and "object of intellection" would be synonymous. But an examination of synonymous words does not fit with the true realities. For we know necessarily that these expressions are not synonymous, since each of them may be true while another is false. If their meaning is not one and the same, then it is wrong to say, as he does, that something's being the subject of self-intellection is identical to himself [as the object of intellection].

He says: we can doubt whether one and the same thing moves itself or not. *Our response*: This is only possible because the meaning of "moving" is different from the meaning of "being moved." How can one say otherwise, given that "moving" belongs to the category of action, whereas "being moved" belongs to the category of being acted upon? As the two meanings differ, we can doubt whether they co-occur in this [162] one entity or not. But in the present case, the disagreement is whether the meaning of "being the subject of intellection" and "being the object of intellection" is the same, not whether they co-occur in one entity despite being different attributes.

[T23] Al-Rāzī, *Jawabāt*, 34.19–35.17

[*responses to al-Masʿūdī on the perpetuity of our self-awareness*]

Our master [al-Rāzī] said: the truth is that our self-awareness is due to the presence of ourselves to ourselves, and our self-awareness is present perpetually (*dāʾiman*). The proof of this is what we have shown: intellection means presence, and is not due to the presence of another form; therefore [35] it is due to the presence of ourselves to ourselves. The eminent [al-Masʿūdī] did not offer any objection to these premises that we might discuss, but only pointed to the phenomena of being asleep or stunned, which is easily solved. For being aware of something is different from being aware of being aware, and remembering the awareness is something different again. Someone who is asleep or stunned is self-aware, yet after waking does not remember that awareness. And someone who is concentrating his thought on another object is self-aware yet not aware of being self-aware. Verification of this argument lies in the fact that, if someone intends a certain act, he does not intend the existence of the act in an unqualified way, but the existence of the act as brought forth *by him*. And intending something involves being aware of it. Therefore, he has awareness of the act which he makes to exist. Knowledge of the act that is related to him is posterior to knowing himself, since knowing the relation between one thing and another is posterior to knowing each of them. Thus, he is known to himself before he knows that the act he makes exist is related to him. This is a decisive point. Likewise, when someone who was sleeping wakes up, there is awakening, but not without qualification—rather the awakening is connected to him. His knowledge of himself, which is part of the whole thing to which he is related [namely that *he* is waking up], is prior to his knowledge of the whole. Likewise, when someone is asleep and feels cold or pain, he pulls away from whatever is causing the pain. He does not pull away from cold or pain without qualification, but from the cold or pain that has befallen *him*. He is known to himself before any of this. For nobody intends any action—regardless whether it has to do with soul or with perception, or whether it involves pulling away or pursuing—in an unqualified way. For instance, he does not intend a motion from just any agent, and does not pull away from an unqualified pain that has affected just any body; but only intends an action to be brought forth *from him*, and only pulls away from the cause of pain which is affecting *him*. So long as he is aware of the relation between his actions and him, his self-awareness is surely prior to the awareness of the relation of these things to him. Whoever turns towards himself regarding this issue will realize that a person's awareness of his own being (*anniyyatihi*) endures perpetually, for he is never oblivious to it, not for a single moment.

[T24] Al-Suhrawardī, *Talwīḥāt*, 239.2–240.1 [trans. Kaukua, mod.]

[***dream of Aristotle***]

So [*Aristotle*] *said to me*: Turn to yourself, and it will be solved for you. *I said*: How? *He said*: You perceive yourself, and your perception of your self is either by yourself or by means of another, but then you would have another faculty or self that perceives yourself, and the discussion would start all over again, which is obviously absurd. Now, when you perceive yourself by yourself, is that by considering a trace (*athar*) of yourself in yourself? *I said*: Of course. *He said*: Then if the trace does not correspond to yourself, it will not be its form, and you will not perceive [yourself]. *So I said*: Then the trace is the form of myself. *He said*: Is your form that of soul without qualification, or of one individuated by other attributes? *I opted for the second, so he said*: Every form in the soul is universal—even if it is composed from many [other] universals—and does not exclude that things share in it. Even if we suppose that this is excluded, it must be due to another hindering factor. You perceive yourself, and it by itself excludes anything else from sharing in this, so this perception is not through a form. *So I said*: I perceive the meaning "I". *And he said*: The meaning of "I" as such does not exclude that sharing occurs. You know that the particular, insofar as it is "particular," is just another universal [i.e. because all particulars are "particular"]; and "this", "I", "we" and "it" have universal intelligible notions with respect to their separate concepts without particular reference. *Then I said*: What then? *He said*: Since your knowledge of your self is not by means of a faculty other than yourself, knowing that you are none other than the one perceiving yourself, neither by a trace that does not correspond nor by one that does, therefore your self is intellect, intellecting, and [240] intelligible.

[T25] Al-Suhrawardī, *Mashāriʿ*, *Ilāhiyyāt*, 484.6–14

[***against representationalist account***][10]

When our souls perceive themselves, their perception is not through a form, for several reasons. First, the form in the soul is not identical to it. Whoever perceives himself does so through the very same thing through which he has "I-ness," not through something else that corresponds [to him]. Every form that is in the perceiver and is additional to himself is "it" in relation to him, not "I". Hence the perception [of oneself] is not through a form. Second, if soul's per-

10 For the immediate sequel see in this volume "Knowledge and Perception," [T33].

ception of itself were through a form, and every form that occurs in the soul is universal, and is susceptible to having many things that correspond to it—even if one takes together all the universals whose conjunction belongs specifically to just one individual among the souls, this will not stop them from being universals, yet every person perceives himself in a way that rules out anything else sharing in it—then his intellection of his particular self cannot be through any form whatsoever.

[T26] Al-Suhrawardī, *Ḥikmat al-ishrāq*, 80.5–10 [trans. Walbridge and Ziai, mod.]

[*a further argument: self-knowledge would be prior to knowing oneself*]

Moreover, if its [self-perception] were through a representation (*mithāl*) and it did not know that this was a representation of itself, it would not know itself. If it does know that it is a representation of itself, it must have already known itself without a representation. How could something be conceived to know itself by something additional to itself, something that would be an attribute for it? If it were to judge that every attribute added to its essence, be it knowledge or something else, belonged to its self, it would have to have known its self prior to [knowing] any of the attributes, without [knowing] them. It would therefore have known its self but not through the additional attributes.

[T27] Al-Suhrawardī, *Ḥikmat al-ishrāq*, 81.4–82.3 [trans. Walbridge and Ziai, mod.]

[*from self-knowledge to pure light*]

Thus it is also clear that thingness is not additional to being aware (*shāʿiriyya*), for it is evident in itself and to itself. There is no other proper item together with it, such that being evident (*ẓuhūr*) could be a state for this item. It is simply the evident itself—nothing else. So it is light (*nūr*) in itself, and is pure light. Your being a perceiver (*mudrikiyyatuka*) is not something else posterior that follows on your self, nor is the aptitude for being perceptive accidental to your self. If your self were assumed to be a being (*anniyya*) that apprehends itself (*nafsahā*), it would itself be prior to the perception and therefore be unknown, which is absurd. Thus it is as we have said.

A rule: if you wish to have a rule regarding light, let it be that light is that which is evident (*ẓāhir*) in its own true reality, and which by itself makes other

things evident. It is in itself more evident than anything whose true reality has "being evident" as something additional. Moreover, that the accidental lights are evident is not[11] due to something additional to them, since in that case they would be hidden in themselves. Rather their being evident is simply due to their own true reality. Nor is it the case that the light occurs, and then being evident follows upon that, in a way that it would not be light in its own definition and would be made evident by something else. Rather light is evident and its being evident is its luminosity. Some falsely suppose that our vision makes evident the light of the Sun, whereas in fact its being evident is its luminosity. If there were no people or in general creatures possessed of sensation, it would still be light.

Here is another way to express this: you ought not to say, "My 'I-ness' is a thing upon which follows 'being evident', so that this thing [sc. 'I-ness'] is in itself hidden." Instead, it is nothing but being evident and luminosity. You already know that thingness is one of the intellectual predicates and attributes, as are [82] a thing's being a true reality and a quiddity. Lack of unawareness is something negative and cannot be your quiddity. So nothing remains but being evident and luminosity. Thus anything that perceives its own self (*dhāt*) is a pure light, and every pure light is evident to itself and perceives its own self.

[T28] Al-Āmidī, *Abkār al-afkār*, vol. 1, 335.18–336.2; 344.11–15

[***self-awareness implies duality on both accounts of knowledge***]

If [God] knew anything, He would know that He knows this thing, but this is impossible for two reasons. First, because it would follow from this that He is self-knowing, as mentioned above, but knowledge about something means nothing other than the impression of the form of what is known in the soul of the knower, or a relation between the knower and the known. On either assumption distinction would come about, but there is neither distinction nor numerical difference in the essence of God—may He be exalted. [336] Second, because it would follow that He knows that He is knowing that He is knowing, and so on to infinity, which is absurd, because it involves a regress. […]

[***knowledge as attribute***]

[344.11] Knowledge is an existential attribute added to the essence. It is not the same as imprinting (*inṭibāʿ*) or a relation that arises between the essence of

11 The printed text omits *laysa* but it is present in Corbin's edition.

the knower and what is known, rather the [required] connection and relation is between the *attribute* of knowledge and what is known. On this basis, it is not impossible that His essence (*dhāt*) knows itself, since it would mean that the attribute of knowledge subsists in His essence, and that attribute would be connected to the essence itself just as it is connected with all other objects of knowledge.

[T29] Al-Āmidī, *Rumūz al-kunūz*, 110^{v}7–9

[*accepts al-Rāzī's solution in T17*]

As for the proponent of the first doctrine, which is that if He knew Himself, there would be distinction between one relatum and the other, that is between the knower and the known, its soundness is undermined by our expressions "His essence (*dhāt*)" and "His self (*nafs*)," since neither of them necessitates distinction despite the realization of relation.

[T30] Al-Āmidī, *Kashf Al-Tamwīhāt*, 165.2–8

[*the self as subject vs. the self as intelligible object*]

[*Al-Rāzī*] *says*: it is distinctive to intellectual perceptions that they involve either our grasping our very selves intellectually, or grasping something additional to our selves. *We say*: in fact it is something additional. *He says*: the additional [form in the mind] is either equal to the quiddity of that thing or not [and neither is possible]. *We say*: it is equal in true reality but not in existence. For the existence of one of them is intellectual, whereas that of the other is concrete (*ʿaynī*). It does not follow on this basis that the two [sc. the subject and object of self-awareness] cannot co-occur, as should be clear, nor is it impossible for the intellectual [sc. the object of self-awareness] to subsist in the concrete [sc. the subject of self-awareness].

[T31] Bābā Afḍal, *Anjām nāma*, 65.11–15; 69.8–11; 73.11–16 [trans. Chittick, mod.]

[*self as soul*]

We use the words "soul (*nafs*)" and "self (*khūd*)" with the same meaning. When we say that any of the existent things lacking perception, whether potentially or actually, is not among the possessors of soul, we mean that it has no self.

When it is said about an ill person who swoons or becomes unconscious, "He left himself," or "He came to be without his self," this is said because he fails to have perception and awareness. […]

[***self as intellect***]

[69.8] When the soul seeks itself, it is potentially found and finder. When it finds itself, it is actually finder and found. As long as it is only potentially a knower of itself, it is the soul. But when it is actually a knower and finder of itself, it is no longer the soul. Rather it is "intellect," for, when its specifying characteristic (*khāṣṣiyyat*) turns into something else, the name also turns into something else.

[***self-awareness as the achievement of finding the intellect in oneself***]

[73.11] The types of existence are bodies and spirits, and the types of spirits are nature, the nutritive soul, the animal soul, and the human soul. Once the states, features, and qualities of these substances are all found, the human soul, in finding whatever it finds of these existents, also finds itself. The result, as we mentioned before, is that humans share in the true reality of whatever they find from this thing that is found. Hence when they find it, they also find the self. When they grasp that which comes to be, the found, and the finder, and when the self is also that which comes to be, the found, and the finder, then they have found the self.

[T32] Al-Abharī, *Kashf al-ḥaqā'iq*, 333.19–334.4; 339.4–15

[***solution to problems posed by al-Rāzī***]

It is said: we do know ourselves without the occurrence of the form of [ourselves] [334] in [ourselves]. Otherwise, the co-occurrence of two indiscernible things would follow. Hence, perception does not mean the occurrence of the quiddity of something in something. *We say*: We do not concede that the co-occurrence of two indiscernibles would follow. For the perceiver is the separate, individuated self, whereas what is perceived is the quiddity of that individual which has been separated from extraneous individuating features.

[339.4] *Investigation of intellect* (*ʿaql*)*, engaged in intellection* (*ʿāqil*)*, and object of intellection* (*maʿqūl*): it is well known that when that which is separate grasps its proper self intellectually, no further form arises in it. Otherwise two indiscernibles would co-occur, such that neither of them would be more appropriately the subject of inherence, while the other is that which inheres in it. Thus its inherence [in itself] is impossible. Thus the self, insofar as it is separate, is

intellect; insofar as it is perceptive it is engaging in intellection; and insofar as it is perceived it is object of intellection. So every separate thing is intellect, engaged in intellection, and object of intellection.

This calls for further inquiry. We do not concede that neither of the two is more appropriate to be the subject of inherence than the other. For one of them is an individuated self-subsistent form (*ṣūra shakhṣiyya qā'ima bi-nafsihā*), whereas the other is an image (*mithāl*) which corresponds to it and is inscribed in it. The self-subsistent is more appropriate to be the subject of inherence. Hence, when something separate perceives itself nothing prevents that this happens through the inscribing (*irtisām*) of its own form in it.

[T33] Al-Abharī, *Bayān al-asrār*, fol. 53^{v}9–14

[***self-awareness as knowledge by presence***]

[Presential knowledge] may occur through the absence of hiddenness without the presence of a distinct essence (*dhāt*), and without the representation of its form, such as soul's perception of its particular self. For soul's perception of its proper self is not through the representation of a form, since every form in the soul is universal, not particular. The perception [of such a form] is not the perception of its particular and specific self whose very meaning rules out that "participation" occurs. The soul is the subject and the object of intellection (*al-ʿāqil wa-l-maʿqūl*). This knowledge is nothing other than a concrete being (*huwiyya*) which is separate from matter.

[T34] Al-Ṭūsī, *Sharḥ al-Ishārāt*, vol. 2, 412.16–413.1

[***aspects solution***]

[*Al-Rāzī*] *says*: The occurrence of something to something requires a difference between the two things, just like a relation of something to something or something's bestowing existence on something. This implies the impossibility of anything's knowing itself. *Answer*: The difference in aspect (*iʿtibār*) suffices for the occurrence [of oneself to oneself] and relation [between oneself and oneself]. For instance, whoever heals himself is, [413] in another aspect, the one who is healed. But [difference in aspect] does not suffice for the bestowal of existence, since the bestower of existence must essentially precede that which it renders existent.

[T35] Al-Ṭūsī, *Maṣāriʿ al-muṣāriʿ*, 130.2–131.5

[***response to T9: the three aspects imply no multiplicity***]

His statement "you have stipulated three aspects in the essence of the Necessary Existent" is slander and defamation of Avicenna, on the basis of which [al-Sharastānī] wanted to force upon him multiplicity in [God's] essence. For [Avicenna] did stipulate the aspects, but did not say they are in the Necessary Existent. "Aspects (*iʿtibārāt*)" is derived from "passing (*ʿubūr*)" and means taking one thing in relation (*qiyās*) to another. Taking [something] in this way is merely accidental and extrinsic to the essence. […] [130.15] These aspects involve taking the being (*huwiyya*) of the Necessary insofar as it is not connected to anything else in its being, and insofar as this being is for this being, and insofar as this [131] being belongs to this being. In all [these aspects] the essence is one and the same. Aspects are the extrinsic attachments of that essence. As for Christians, they made the composition of the three attributes, which are the hypostasis of Father, Son, and the Holy Ghost, one God. Likewise, the Ashʿarites made the composition of the essence and eight eternal attributes one God.

[T36] Ibn Kammūna, *Sharḥ al-Talwīḥāt*, vol. 3, 376.17–20

[***intuition of self-awareness***]

When a person turns towards himself, he knows decisively that he and no one else is the one who perceives himself. This belongs to the necessary items of knowledge (*al-ʿulūm al-ḍarūriyya*) for which suffice a bare admonition and reminder, without anything else. "The person (*al-insān*)" simply means the rational soul that inhabits in his body, just as one is reminded of it. The knowledge that soul's perception of itself is through itself, not through something else, is immediate (*awwalī*) knowledge.

[T37] Ibn Kammūna, *Sharḥ al-Talwīḥāt*, vol. 3, 377.17–378.7

[***on the designation of "I", commenting on T20 above***]

Let no one ask: why can't one perceive oneself through a form that is the meaning of the word "I", which by itself excludes anything else sharing it, so that it is not universal, such that the particular soul would be perceived through it? *For we respond*: The meaning of "I" as such does not exclude that sharing occurs, just as you learned in logic: "particular" is just another universal, unlike that

which is truly said to be a particular. Likewise the meaning of "I" is universal, and the particular soul is not perceived through it. [Likewise] the words "this", "I", "we", and "it" each has a meaning that is intellectually grasped as universal insofar as they are understood on their own, without any indication of particulars, even though they are in themselves indications [378] of particulars. There is however a difference between the indication and the indicated. For the indicated, as such, is particular. Yet the indication, when it is not indicated itself as a particular so as to become indicated in a given way, can only be universal. It becomes particular only through that indication.

The upshot is that if the meaning, which is the indication of something, is taken in the intellect insofar as it has that meaning, then it must be universal. If however it is used with a particular indication, then it becomes particular. When one intellectually grasps the indication of something particular this does not eliminate its universality, since the relation to something particular does not exclude universality, for example, "Zayd's house" and "Bakr's horse".

[T38] Al-Shahrazūrī, *Shajara*, vol. 3, 489.7–9

[*intuition of self-awareness*]

The second proof for the fact that soul's perception of itself is through itself and not through anything else is that if any human who has slightest insight and understanding abandons preoccupation with bodies for a time and turns to himself, then he will not doubt that he perceives himself through himself, and that it is certainly not something else that perceives him.

[T39] Al-Shahrazūrī, *Shajara*, vol. 3, 490.16–491.2

[*self-awareness and the non-individuality of representation*]

Self-perception cannot be through any unqualified form (*ṣūra muṭlaqa*). Otherwise one's perception of that specified soul [i.e. one's own soul]—insofar as it is this specified soul—will not be the perception [of that soul] in this [specified] respect. Yet we speak of the soul's self-perception in this specified respect. Hence soul does not perceive itself through an unqualified form. Nor can it perceive itself through a specified form, since any form in the soul, whatever it may be, is universal—regardless whether it is simple or composed from things which are collected in more than one concrete individual [491], or are collected in just one individual, such as things which are simple in the mind in respect of quiddity and attributes, and which correspond to only one concrete individual.

[T40] Al-Shahrazūrī, *Shajara*, vol. 3, 492.7–10

[*self-awareness and light*]

Rational soul perceives itself neither through a trace, nor through something other than a trace, nor through a trace that is additional to itself, however this is construed. It perceives itself through itself, since it is the same as "being evident" and luminosity. Its being evident to itself cannot be hidden since whenever the essence of something is "being evident" and luminosity itself, how can one conceive of its being hidden from itself?

[T41] Al-Shahrazūrī, *Shajara*, vol. 3, 495.16–496.2

[*perpetuity of self-awareness*]

Intellection may be divided into that which can at times be hidden from the essence of the subject of intellection, like the many things that are hidden from the perception of soul, and that which cannot be hidden from the self of the subject of intellection, such as the perpetual, specified self-perception of whatever is separate from matter among souls and intellects. For everything separate perpetually perceives itself in accordance with the perpetuity of its self. Nevertheless, it does not follow from the perpetuity of its self-intellection in accordance with the perpetuity of itself that it cannot intellectually grasp anything else. Rather it must have intellection of other things alongside the perpetuity of its self-intellection. For instance, this is the case of intellectual principles and [496] perfect souls. For each of them perpetually intellectually grasps all separate intelligibles alongside the perpetuity of their self-perception.

[T42] Al-Ḥillī, *Asrār*, 558.7–559.6

[*problem that the knower and known must be distinct; three solutions criticized*]

A counterargument arises here, namely that if our self-intellection were the same as our selves, then our knowledge of our knowledge of ourselves would be the same as our knowledge of ourselves, which in turn would be the same as our selves, from which it would follow that multiple, distinct acts of intellection would occur all at once, which is absurd. Besides [self-intellection is an issue], because the occurrence of one thing for another is a relation, which calls for a difference between the two things.

Some right thinking people responded that our self-knowledge is essentially the same as our selves, but different under a certain aspect (*iʿtibār*). A single thing is not divided through its [mere] mental aspects when someone is considering it under these aspects, yet the difference in aspects suffices for a relation to arise.

I say: this is a matter for further inquiry. For we posit our selves and our knowledge of our selves, free from any aspects. In which case, we can ask whether they [sc. our selves and the knowledge of ourselves] are one and the same, or different? And one is back to the same difficulty. Maybe they would say here that an essence, in respect of its being knowing, differs from itself in respect of its being known. The relata are thus enumerable, and it is right to speak of relation. Yet this is weak. For here the difference presupposes knowledge, whereas in fact knowledge presupposes differentiation.

They've given another solution, namely that the knower is the one to whom a separate quiddity occurs. This is more general than his being either different or not different from [the quiddity]. And one cannot infer from the falsehood of a specific case to the falsehood of the general case. But this is really unconvincing. For it does not follow from the generality of something in the intellect that the more general can exist [559] without the more specific. Just consider the case of causation. If you say, "this is a cause," that is more general than its being either the cause of itself or the cause of something else, but still it is impossible that something be a cause for itself.

They've given yet another solution, namely that *human* is a universal quiddity, whereas Zayd is an individual of that quiddity, which occurs through the addition to it of something further. Zayd intellectually grasps that quiddity, which is distinct from him in respect of (*bi-iʿtibār*) universality and particularity. Now, this is correct as concerns the intellection of the universal, but does not apply to Zayd's intellection of himself. Those who say that knowledge is relation between the knower and the known have real trouble with this topic.

CHAPTER 17

Paradoxes

Perhaps because of the striking parallel to Latin scholastic philosophy, and certainly because of the intrinsic interest of the topic, one of the better-researched areas in post-classical Arabic logic is the "Liar Paradox."[1] Of course this isn't saying much, given that the topic in general is scarcely researched. Indeed the study of paradoxes in our period and beyond still has much to discover. In this chapter we only scratch the surface by presenting three distinct paradoxes, beginning with the Liar, which was already known in antiquity, and moving on to two paradoxes that, so far as we know, developed independently in the Islamic world. Uniquely in this book, the introduction and translated passages are divided into sections for the reader's convenience, with one section on each paradox. The three paradoxes relate to other issues that have already come up in the book: theories of reference, knowledge, and relations. This begins to explain why our authors found it worthwhile to discuss them. Another factor would be the way that logic was increasingly becoming an independent field of inquiry in its own right, as we have seen. Finally, it could be explained in terms of the style of philosophical discourse in the period, which typically tried to force an absurdity on an opponent (whether real or hypothetical). Since paradoxes are precisely designed to generate contradictions, that is, contradictions that cannot be resolved, they fit perfectly with this methodological trend.

1 See e.g. A.F. Qaramelaki, "Moʿammâ-ye jadhr-e aṣamm dar ḥowzeh-ye falsafî-ye Shîrâz (The Liar Paradox in the Philosophical Circle of Shīrāz)," *Kherad-nâmeh* 1, 4.4 (1996), 80–85; H. Ziai, "Recent Trends in Arabic and Persian Philosophy," in P. Adamson and R.C. Taylor (eds), *The Cambridge Companion to Arabic Philosophy* (Cambridge: 2005), 405–425; A. Alwishah and D. Sanson, "The Early Arabic Liar: the Liar Paradox in the Islamic World from the Mid-Ninth to the Mid-Thirteenth Centuries CE," *Vivarium* 47 (2009), 97–127; D. Sanson and A. Alwishah, "Al-Taftāzānī on the Liar Paradox," *Oxford Studies in Medieval Philosophy* 4 (2016), 100–124; H. Rezakhany, "Jalāl ad-Dīn ad-Dawānī's Solution to the Liar Paradox and Its Reception in Qāḍī Mubārak and Mullā Mubīn," *Journal of South Asian Intellectual History* 1 (2018), 183–220; K. El-Rouayheb, "The Liar Paradox in Fifteenth-Century Shiraz: The Exchange Between Ṣadr al-Dīn al-Dashtakī and Jalāl al-Dīn al-Dawānī," *British Journal for the History of Philosophy* 28 (2020), 251–275; Y. Daşdemir, "A Fifteenth-Century Ottoman Solution to the Liar Paradox by Ḫaṭîbzāde Muḥyiddīn," *Arabic Sciences and Philosophy* 33 (2023), 237–263. See also the two studies by Zarepour, cited below. For the Latin tradition see e.g. P.V. Spade, *Lies, Language and Logic in the Late Middle Ages* (London: 1988); S. Read, "Paradoxes of Signification," *Vivarium* 54 (2016), 335–355.

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1 The Liar Paradox

The most familiar of the three is the Liar Paradox. Usually, this involves a self-referential sentence that would be true if it is false, and false if true, for example "This very statement I am now uttering is false." As our texts illustrate, there was no consensus as to how exactly the problematic "Liar sentence" should be formulated. In [T1] we are asked to imagine that someone who has never lied until he now says "I am a liar." Since, on an absolute reading (see our chapters on the Proposition and Conversion above), this should mean "I am at least once a liar," the sentence will be false unless it is true, in which case the speaker is lying right now. Perhaps because this hypothetical situation is needlessly extravagant—someone who has *never* lied?—a more plausible, but philosophically equivalent, version was developed [T3, T4, T5]. Here someone says nothing for a whole hour, apart from "Everything I say this hour is false." This version you can try at home! There is however one other noteworthy formulation in our texts, presented by al-Kātibī [T2]. Here there is not just one self-referential sentence, but two sentences that refer to each other, as "What I will say next is true," followed by "What I said just now was false." This is a powerful variation since, having two sentences, neither of which is directly self-referential, it is immune to one family of solutions, which would rule out self-referential sentences.

The problem, in any case, is clear. Far less so is the solution. Al-Abharī proposes that the Liar statement is simply false [T3].[2] His reasoning seems to be that the *meaning* of the Liar statement is that this very statement is both true and false. So it cannot be true, because then it would be both true and false: a contradiction. But it can be false, because "it is false that the Liar statement is both true and false" is actually a *denial* of a contradiction, not an assertion of it. The trickiest move comes at the end of the passage, where al-Abharī says, "the negation of the conjunction of its being true and false does not entail that it be true." Here the idea is that, in general, if we deny a conjunction ("Not: A and B") this implies only a disjunction ("Either not-A, or not-B"). Applied to our present problem, this means that if one deems the Liar statement false, then this yields only the unproblematic disjunction "Either the statement is not true, or the statement is not false."

How cogent is this solution? In our view it goes astray at the very first step, when al-Abharī assumes that the truth of the Liar statement is immediately tantamount to the affirmation of a contradiction. This is not so: the truth of the Liar statement in fact directly implies only its falsehood; it is a further step to infer its truth from this falsehood. In other words, al-Abharī analyzes the

2 On this solution see M.S. Zarepour, "Abharī's Solution to the Liar Paradox: A Logical Analysis," *History and Philosophy of Logic* 42 (2021), 1–16.

situation as follows: T → T-and-F, whereas in fact the situation is T → F → T (and so on). Al-Ṭūsī is therefore correct to challenge al-Abhāri's understanding of the "meaning (*mafhūm*)" of the Liar statement [T4].

Al-Ṭūsī's own solution is simply to deny that sentences like the Liar have any truth value.[3] Unfortunately this seems rather ad hoc, even with Ibn Kammūna's additional distinction in [T6] that a sentence need only be "susceptible" to truth and falsehood in order to be a statement, but does not need actually to be true or false. The Liar, then, would be the "sort of thing" that could be true or false, because it is an assertoric proposition, but it just happens to be neither. (Compare statements like "There will be a sea battle tomorrow," which are sometimes thought to be neither true nor false because of the openness of the future.)

A better rationale for al-Ṭūsī's truth-value-denying solution is however given by him in [T4], and also by Ibn Kammūna in [T7] and al-Ḥillī in [T8]. For propositions, the definition of "truth" is that the proposition corresponds to the state of affairs it concerns. For instance, "The giraffe is relaxed" is true just in case the giraffe is in fact relaxed. But with the Liar, there is no difference between the proposition and the thing it concerns, so the question of "correspondence," and hence truth, does not arise. This does seem an improvement, since a rationale is now being given for denying the truth value of self-referential statements. Unfortunately, it is not clear how plausible the rationale is. For example "This statement is in English" seems straightforwardly true, precisely because what it says corresponds with the way it is. And in any case, as already noted, this whole strategy will not work against the two sentence version of the Liar paradox given by al-Kātibī [T2].

Speaking of two sentences, another solution found in al-Samarqandī involves distinguishing two implicitly different statements within the apparently single Liar statement [T5]. It is one thing to say:

X = Everything I say this hour is false

And another to say:

Y = "X" is false

even if, as it happens, the only thing I say this hour is X. The contradiction is thus avoided because the subjects of the two statements would be different:

3 For further analysis see Zarepour, "Abharī's Solution to the Liar Paradox" and Alwishah and Sanson, "The Early Arabic Liar."

the subject of statement X is "everything I say this hour," whereas the subject of Y is statement X. So one could be true and the other false.[4]

In our view, this solution gains whatever plausibility it has from the fact that the Liar sentence *need* not have been the only thing said in this hour. In a situation where X and "everything I say this hour" are in fact identical, it is not in fact possible that X and Y could have different truth values. The weakness of al-Samarqandī's solution is revealed by the fact that it would not work against a more straightforward formulation of the Liar statement, like the one we started with: "This very statement I am now uttering is false." Furthermore, the solution relies on the claim that any liar sentence is inevitably to be analyzed into two. It seems perfectly reasonable to deny this claim, insisting instead that there is in reality only one sentence, as did indeed later philosophers, such as Dawānī.

2 The Paradox of the Absolute Unknown

Our second paradox has already come up tangentially in a previous chapter, when we looked at conception and assent (see [T12] in that chapter). It was raised as a problem for the standard view that the terms of a proposition must be grasped conceptually before a judgment can be made about that proposition. To put it another way, conception is a precondition for assent. This provides us with context for the paradox, which concerns "absolute unknowns (*al-majhūl al-muṭlaq*)," meaning precisely that which has not been conceptualized in any way. It seems evident that a judgment *can* be made about an absolute unknown after all. For example, we can judge of it that it is unknown. Or, to put it in terms that bring out the paradox with full clarity, we can and do judge of absolute unknowns that no judgment can be made about them. Clearly, there is a quick way out: we can just reject the rule that things must be somehow known if judgments are to be made about them, since it is this rule that leads to the contradiction. The problem is that this rule was considered to be known immediately (*badīhī*), i.e. known without reasoning to be certainly true, so the paradox had to be solved.[5]

Al-Rāzī takes a keen interest in the problem and devotes a long discussion to it [T9]. He considers two solutions, namely that the only thing being judged to hold of conceptual unknowns is precisely that they are conceptually

4 For more on this solution, see M.S. Zarepour, "Dashtakī's Solution to the Liar Paradox: A Synthesis of the Earlier Solutions Proposed by Ṭūsī and Samarqandī," *History and Philosophy of Logic* (published online 2023).

5 On this paradox see H. Rezakhany, "The Paradox of the Absolute Unknown: Notes on the East-

unknown—which hardly shows that they are known!—and that the judgment concerns the person who is judging, not absolute unknowns themselves. Both solutions are rejected: the first would imply that conceptual unknowns are indeed conceptually known, even if only *as being* conceptually unknown, and the second just refuses to engage with the problem. These seem like good objections, meaning that the paradox remains unsolved.

There are two main lines of attack on the paradox in our period; actually we include a couple of later texts that bear on the issue, from a self-commentary by Ṣadr al-Sharīʿa (d. 1347 CE) and a commentary on the *Maṭāliʿ* of al-Urmawī, by Maḥmūd ibn ʿAbdarraḥmān al-Iṣfahānī (d. 1348). The first approach involves distinguishing between the externalist (*khārijī*) and essential (*ḥaqīqī*) readings of the proposition's subject term (for this distinction see our chapter on Modal Syllogistic). As a quick reminder, the subject term of a proposition is taken with the "externalist" reading only if the proposition is read as saying that the predicate actually holds of the subject outside the mind. By contrast a proposition that holds of a subject term read "essentially" is true of that subject just in case it would hold if the subject *were* to exist outside the mind (whether it actually does or not is irrelevant). For example "horses are hooved" is true on the externalist reading, since there are extramentally real horses with hooves. By contrast "unicorns are hooved" holds only essentially, since if there were unicorns they would have hooves, but not on the externalist reading, because there are in fact no unicorns.

Al-Khūnajī argues that this distinction can be used to avoid the contradiction [T10, cf. T14]. Absolute unknowns, as such, do not exist outside the mind. So on the externalist reading, the proposition "No absolute unknown can be a subject of judgment" does not hold true: there is nothing for it to hold true *about*. On the essentialist reading though, it does hold true: an absolute unknown as such could have nothing true of it were it to exist. Nobody could even judge of it that it is not a possible object of judgment, since nobody could have a conception of it (after all if they did, it would cease to be unconceived!). This looks rather satisfying, but the solution is rejected by several later authors. Al-Samarqandī makes several objections [T13], of which the most interesting is probably the second: perhaps there are in fact some extramentally existing things that no one has conceived, in which case the proposition can after all be applied to them on the externalist reading. This point was also made later by al-Iṣfahānī [T16].

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ern Islamic Literature," in B. Bartocci and S. Read (eds), *Theories of Paradox in the Middle Ages* (Cambridge: 2023), 130–167, which contains, in addition to some analysis, further translations besides those included in this chapter.

Let's move on to the second approach, which is found in al-Abharī [T11] and repeated by al-Ṭūsī [T12]. We can call this the "description-referent solution." The idea here is that an absolute unknown can only be conceived *under the description* of being unknown or unconceived. (As so often, the term *iʿtibār* is used to capture this idea of something's being the case only from a certain perspective.) The intuition might be captured with an example like the following. Suppose Mary says, "things about which I'm completely ignorant are of no interest to me." And suppose Mary is completely ignorant of giraffes. She is not a giraffe scientist who simply hasn't met a giraffe, but has literally never heard of them and has no inkling of their existence. (Poor Mary!) It seems clear that Mary is not actually saying *of giraffes* that she is uninterested in them. How could she, being totally unaware of them? She is just saying, in an open-ended fashion, that anything to which this description applies is of no interest to her. On the other hand, if we adopt an objective point of view and consider the giraffe in itself as a referent and not as something that is conceived as unknown to her, she would have to be uninterested in them for some other reason besides their falling under the description 'something I am completely ignorant of'.

Again, the solution looks promising yet receives some critical pushback, in this case from al-Ḥillī [T14]. He insists that there is still a contradiction even if we focus just on the idea that absolute unknowns are known *under the description* "unknown," since then of course they would be known. An attempt to assuage such a concern can be found in Ṣadr al-Sharīʿa [T15], who suggests that on the contrary, the sense in which an "absolute unknown" is known is "accidental" to it and not to be taken into account when judgements are made about it. "Absolute unknown" only bears the property "known" accidentally, as a result of "arising in the mind." In itself, it is still absolutely unknown. Nonetheless, it remains known (accidentally) by virtue of the fact that it is present in the mind, and it can therefore figure as a subject of judgement. Further, its being a subject of judgement does not contradict its being absolutely unknown in itself, since it is only known due to the fact that has come to be in the mind. When evaluating the judgement "No absolute unknown can be a subject of judgement," we must only take into consideration the essential content of "absolute unknown," not its mentally-produced, accidental property "known."

3 The Paradox of the Totality of All Relations

Our final paradox appears to have been formulated for the first time by al-Kātibī [T17]; we quote it in the context of a commentary on al-Kātibī's *Ḥikmat al-ʿayn* since the response by the commentator, Ibn Mubārakshāh (fl. 1354),

is itself interesting. For some readers this puzzle may bring to mind Russell's paradox. Here we work not with the notion of a set that contains sets, but the relation that relates relations to one another. In particular, we are interested in that relation (call it R) which relates *all* relations by binding them together into a totality (call it M). The difficulty is that relations are supposed to be distinct from their relata; let us call this the distinctness principle. For example, the relationship of fatherhood is distinct from the father and the child. In the present case, R is itself a relation, so it should be a member of M. But it is a relation between all members of M, so it could not be distinct from itself, which is absurd.[6]

Notice that there is a structural similarity here to our previous paradox, in that the contradiction follows only if we make a certain assumption. In the previous case, this was that an absolute unknown cannot be a subject of predication. Here, it is the distinctness principle. If we give up this principle, the problem disappears. But giving it up is not so easy. For example, as al-Jurjānī notes [T19], a relation would seem to be posterior to its relata (fatherhood presupposes a father and a child), and posteriority obviously requires distinctness. Moreover, the principle was explicitly recognized as immediate by members of the tradition, which meant that giving it up would entail scepticism.

A number of philosophers would take up the problem later, for example the great Safavid thinker Mīr Dāmād and, in Mughal India, Mīr Zāhid al-Harawī. It is not yet discussed extensively in our period, which is unsurprising since the problem comes in only with al-Kātibī. Al-Ḥillī talks about it only briefly, and only to insist that the paradox cannot be solved by denying the distinctness principle, which is "self-evidently" known to be correct. One rather suspects, though, that the thinkers of our period would have been attracted by al-Jurjānī's solution [T19], since it again invokes that popular device of appealing to different points of view or "respects." Insofar as relation R is just considered generically as a relation, it is simply a part of M and thus prior to it. But insofar as R specifically includes M as one of its relata, it is posterior to M, as every relation is posterior to its relata. As with attempted solutions to our other two paradoxes, this response shows the power and usefulness of the technical tools in Avicennan and post-Avicennan philosophy, like the distinctions between mental and extramental phenomena, or that between externalist and essential

6 For the history of the paradox in the Islamic world and several other solutions and objections, see H. Rezakhany, "A Forgotten Mereological Paradox," in T. Street et al. (eds), *Fallacies in the Arabic, Byzantine, Hebrew, and Latin Traditions* (Turnhout: 2023), 187–207.

readings, or the idea of merely conceptual reality. They could be used to solve problems that had little or nothing to do with the context in which they were originally proposed, including problems that had not even been discovered yet.

Texts from: Fakhr al-Dīn al-Rāzī, al-Khūnajī, al-Abharī, al-Kātibī, Naṣīr al-Dīn al-Ṭūsī, al-Samarqandī, Ibn Kammūna, al-Ḥillī, al-Jurjānī, Ṣadr al-Sharīʿa, Ibn Mubārakshāh, Maḥmūd ibn ʿAbd al-Raḥmān al-Iṣfahānī

The Liar Paradox (*Shubhat al-Jadhr al-Aṣamm*)

[T1] Al-Rāzī, *Maḥṣūl*, vol. 4, 291.2–14

[*"I am a liar" formulation; only discussion of the liar by al-Rāzī*]

On the report (*khabar*) *that is surely false*. It is fourfold. First, the report whose content conflicts with the existence of what is known self-evidently, whether that self-evident knowledge be derived from sensation (*ḥissī*), inner perception (*wijdānī*), or immediacy (*badīhī*).[7] One such report is the sentence, "I am a liar," when the speaker has never before lied. This report is false, since what is reported as being false is either (a) some other reports made before this one, or else (b) this very report. (a) In the first case, [the report would be] false, since those prior reports were not false, and therefore it would be false for the reporter to declare himself as having lied in reporting them. (b) In the second case, [the report would again be] false, since a report about something is posterior in order (*fī l-rutba*) to the thing about which it reports. Hence, if we made a report the very same thing about which it reports, it would follow that something is posterior in order to itself, which is absurd.

7 *Badīhī* cannot here mean the broader category, since Rāzī juxtaposes it with the sub-categories *ḥiss* and *wijdān*. Indeed, using *badīhī* to mean *awwalī* was rather common, and Rāzī does it in other works as well. Compare, for example, Fakhr al-Dīn Rāzī, *Nihāyat al-ʿuqūl fī dirāyat al-uṣūl*, ed. Saʿīd ʿAbd al-Laṭīf Fūda, vol. 1 (Beirut: 2015), 166.11 and 169.5–6. See also ʿAlī b. Muḥammad Jurjānī, *Kitāb al-Taʿrīfāt*, ed. Muḥammad Siddīq al-Minshāwī (Cairo: n.d.), 40.17–21; M.A. Tahānawī, *Kashshāf iṣṭilāḥāt al-funūn wa-l-ʿulūm*, ed. R. ʿAjam, vol. 1 (Beirut: 1996), 318.20–22. Hence, for a proposition to be known 'immediately' in the sense of the term used here is for it to be known merely by understanding (*taṣawwur*) the subject and predicate.

[T2] Al-Kātibī, *Munaṣṣaṣ*, 119^{v}1–4

[***two statement formulation***]

Of the same kind [of sophism] are the statements, (a) "What I will state is true," and (b) "What I stated is false." If "What I will state is true," is true, (b) must be true, but if (b) is true,[8] (a) must of necessity be false, and therefore, that (a) is true entails that it is also false. If however (a) is false, it follows that (b) is [false] too. And if (b) is false, (a) must of necessity be true, and therefore, that (a) is false entails that it is also true. Contradiction, therefore, necessarily occurs whether (a) is assumed true or assumed false, but that is absurd.

[T3] Al-Abharī, *Tanzīl*, quoted from al-Ṭūsī, *Taʿdīl*, 236.7–9

[***solution: the liar is false without contradiction***]

The solution to [*the Liar*] *is as follows*. We do not concede that if ["Everything I say this hour is false"] were false, it would follow that some instances of "Everything I say this hour" would be true. This is because for ["Everything I say this hour is false"] to be true is tantamount to the conjunction (*ijtimāʿ*) of its being true and its being false [i.e., "*p* (= 'Everything I say this hour is false' is true) and *q* (= 'Everything I say this hour is false' is false)."]. Hence, were [the Liar sentence] false, it would follow that the conjunction of its being true and false would be negated [i.e., "~(*p* and *q*)"]. But the negation of the conjunction of its being true and false does not entail that it be true [since ~(*p* and *q*) → (~*p* or ~*q*), and (~*p* or ~*q*) could be true with only one of its disjuncts being true].

[T4] Al-Ṭūsī, *Taʿdīl*, 236.10–237.17[9]

[***criticism of al-Abharī's solution***]

I say: if Abharī means by, "… for ['Everything I say this hour is false'] to be true is tantamount to the conjunction of its being true and its being false" that the sense (*mafhūm*) of [the Liar sentence's] truth is just that conjunction, this is not conceded. But if he instead means that [the Liar sentence's] truth entails

8 Reading *ṣaduqa* for *kadhiba*.

9 For an alternative translation of this passage as well as of [T5, T7, T8] see M.S. Zarepour, "Dashtakī's Solution to the Liar Paradox: A Synthesis of the Earlier Solutions Proposed by Ṭūsī and Samarqandī," *History and Philosophy of Logic* (2023), 19–22.

its falsehood, then we do not concede that its being false entails that it does not also entail [that it is true]. Rather, its being false would imply precisely that "false" is denied of "everything I say this hour," which in turn would imply that "everything I say this hour" is *not* false, which is all we mean by "true." Thus, it is clear that [the Liar sentence's] falsehood entails its truth, and the problem returns.

It would have been better for [al-Abharī] to have said that the [Liar sentence's] falsehood only implies its truth in actual fact (*fī nafs al-amr*), because[10] we hold that "true" and "false" are contradictories, such that the affirmation of one of them follows from the negation of the other. But on the assumption that [the Liar sentence's] truth implies its falsehood, denying that it is false would *not* imply that it is true, since the contradictory of the consequent will not yield the antecedent itself, but rather only the negation of [the antecedent's] truth.[11] Hence, while an absurdity is yielded by [the Liar sentence's] *truth*, since that implies that it is also false, no absurdity results from its *falsehood*, since that only implies that it is not true.

But someone might say: just as the [Liar sentence's] being true implies its falsehood, so too its falsehood mutually implies its truth. For if [the Liar sentence] is false, then its report about itself that it is false must be true, and the difficulty resurfaces. [237] One could respond by saying that the Liar sentence's truth (insofar as it is a proposition) and its falsehood (insofar as it is the subject of that proposition) do indeed mutually imply each other. But that is not what we are talking about. Rather, we are talking about [the Liar sentence's] falsehood insofar as it is a proposition, and its falsehood insofar as it is a proposition does *not* imply that it is true, only that it is not false (insofar as it is the subject of the proposition) and, indeed, that it is false (insofar as it is a proposition). So we do not concede that it follows from [the fact that the Liar sentence] is not false that it is true in this case.

[*solution: self-referential sentences are neither true nor false*]

The correct position [on this problem] (*wa-l-taḥqīq fī-hi*), however, is that "true" and "false" apply only to propositions that are not the same as what they represent, such that it is even conceivable that the proposition and its opposite could

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10 Reading *li-annahu* for *aʿnī*

11 Al-Ṭūsī is thinking as follows:

p (= "Everything I say this hour is false" is true) → *q* (= "Everything I say this hour is false" is false)

~*q*

Conclusion: ~*p*

Again, for further analysis, see Zarepour, "Abharī's Solution to the Liar Paradox."

occur as contradictories, in the sense that if one corresponded to the thing being represented, the other would not, and the first would be true and the other false. Moreover, the negation of one would imply affirmation of the other, and vice-versa. If, by contrast, the proposition is identical with what it represents (*idhā kāna l-khabar bi-ʿaynihi al-mukhbar ʿanhu*), it is inconceivable for it to be true or false, since no correspondence could be conceived: correspondence is only conceivable between two [distinct] things.[12] Furthermore, contradiction would be inconceivable, since if there is only the one thing that is affirmed, there is nothing to be negated, and vice-versa. If such a [self-referential] proposition reports about itself that it is false, no correspondence between two things (this being the meaning of "truth") could be conceived. Only the lack of correspondence could be conceived, but not in the sense of the lack of correspondence that is a lack opposite to the positive character (*malaka*) [of truth], that is, falsehood, but rather in the sense of mere negation of correspondence, namely the [mere] lack of truth. Hence, it could be true of such a proposition neither that it is true, nor that it is false. Judging it to be either one implies an absurdity. Rather, it is true of such a proposition that it is neither true nor false. Furthermore, denying just one of the two does not entail affirming the other, so no absurdity arises.[13]

[T5] Al-Samarqandī, *Qisṭās*, 551.11–553.7

[*"Everything I say this hour" formulation*]

[Example of the kind of sophism] "many theorems in one" (*jamʿ al-masāʾil*):[14] contradictions can occur, since if someone says, "Everything I say this hour is false," saying nothing else for the duration of the hour, it would have to be that,

12 Reading *wa-innahā lā yutaṣawwar illā …* instead of *wa-innahumā lā yutaṣawwarān illā* at 237.10. Without the emendation, the translation would be, "and 'true' and 'false' can only be conceived of between two things."

13 Ṭūsī and Athīr al-Dīn Abharī, "Taʿdīl al-miʿyār fī naqd Tanzīl al-afkār," 236.10–237.17. For more on Ṭūsī's solution, see A. Alwishah and D. Sanson, "The Early Arabic Liar: The Liar Paradox in the Islamic World from the Mid-Ninth to the Mid-Thirteenth Centuries CE," *Vivarium* 47 (2009), 97–127.

14 "Errors that occur in the non-syllogistic composition of propositions are called 'many theorems in one.' For example, 'Man alone is a writer, and every writer is an animal,' which produces the false conclusion, 'Man alone is an animal,' since the minor premise contains two propositions, an affirmative [namely, 'Man is a writer'] and negative ['Nothing besides man is a writer'], the latter of which plays no role in producing the conclusion. Hence, if it is omitted, the conclusion is true. Due to the minor containing two propositions, this error is called 'many theorems in one'": al-Ḥasan b. Yūsuf b. al-Muṭahhar Ḥillī and Naṣīr

in actual fact (*fī nafs al-amr*), what he says is either true or false, and either way a contradiction would follow. If what he says is true, it follows that everything he says that hour is false. But that very sentence is something he says that hour, so it must be false; yet it was assumed to be true, and so a contradiction follows. But if what he says is false, again a contradiction follows. For in this case, it follows that some individual things he says that hour are true, but he doesn't say anything else in that hour. So it follows that what he says is true, but it was assumed to be false, so a contradiction follows. This is a well-known sophism, and all scholars have been bewildered as to how to solve it. They have blackened page after page, but none of it has been convincing (*muqniʿ*).

[***two sentence solution***]

[553.1] *Solution*: what a statement represents is determined only by the intention of the one who makes it. If by "everything I say" one intends, "everything I say, apart from this very statement," there is no contradiction. Since in that case, it would not be the truth or falsehood of that very sentence that would follow from its being false or true but the truth or falsehood of some other sentence. But if one means "everything I say, including this very statement," it would be as if one uttered this statement and then said, "That statement [I have just made] is false," thus combining in this single remark two statements, each linked to the other. That one is true demands that the other be false and that one is false demands that the other be true, but this is no contradiction, since "true" and "false" do not in that case apply to the same thing.

[T6] Ibn Kammūna, *Mukātabāt* , quoted by Al-Dawānī[15]

[***solution: statements can be neither true nor false***]

We do not concede that "everything I say this hour [is false]" is either false or true: we reject the choice between these options. If it is said that [the Liar] is a statement, and that every statement must be one or the other, since it is by that characteristic that statements are distinguished from all other sentences, then we respond as follows. We do not concede that this is how statements are distinguished from all other sentences. Rather, they are distinguished by the fact that they are *susceptible* to being judged true or false. But to judge [that a

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al-Dīn Muḥammad b. Muḥammad Ṭūsī, *al-Jawhar al-naḍīd fī sharḥ manṭiq al-Tajrīd*, ed. M. Bīdārfar (Qum: 1985), 274.13–17. For a similar explanation and the same example, see Samarqandī, *Qisṭās al-afkār*, 537.7–8, 553.8–12.

15 We quote this text from 119.17–120.2.

statement is merely susceptible] to this does not conflict with its being neither true nor false. It is no condition for the judgment just mentioned [namely that the statement is susceptible to truth and falsehood] that [the statement actually] be either true [120] or false. In sum, that a given judgement is susceptible to being true or false does not conflict with its being neither in its own right.

[T7] Ibn Kammūna, *Al-Jadīd fī l-ḥikma* 74.20–75.16

[***"Everything I say in this house" formulation***]

Suppose someone enters a house and says, "Everything I say in this house is false," and then leaves. […]

[***modified version of al-Ṭūsī's solution***]

[75.6] *Solution*: this statement [i.e., the Liar] is a statement about itself. Hence, the statement and what it represents are one and the same. So it cannot be true, since what we understand by truth is the correspondence of a statement to what it represents, and correspondence is impossible without some sort of duality; but there is no such duality in this case. Hence [the Liar] is false, due to the lack of correspondence just mentioned. Now, its being false in this sense does not imply that it is also true. That would follow only if duality were established, along with a lack of correspondence [that is, because the sentence has first to be false in order to be true]. Those who have verified (*taḥaqqaq*) the difference between simple and metathetic negation will grasp the difference between the two senses of "false" here.[16] […]

[***solution in terms of extramental vs mental reality***]

[75.14] Furthermore, if the subject term of this statement is taken in the extramental sense (*khārijiyyan*), the statement will be false, since the subject term will have no referent. But it does not follow from this that it is also true: after

16 "If the predicate is metathetic—which is a predicate expressed using a particle of negation along with a definitive utterance—then the categorical proposition is called 'metathetic.' For example, 'Man is a non-horse.' Affirmative metathetic propositions are often confused with negative definitive (*muḥaṣṣala*) propositions. The difference between the two is that, in an affirmative metathetic proposition, the judgement is the attribution of a negation (*irtibāṭ al-salb*), whereas, in a negative definitive proposition, the judgement is the negation of an attribution (*salb al-irtibāṭ*). Hence, the negation in one is a denial of affirmation, while it is the opposite in the other [i.e., an affirmation of denial]." Ibn Kammūna, *al-Jadīd fī l-ḥikma*, 23.13–18. For this distinction see also our chapter on the Proposition in the present volume.

all, there are many instances of ["everything I say in this house"] in the mind besides ["Everything I say in this house is false"], and that just one of those instances is false does not make "Everything I say in this house is false" true.

[T8] Al-Ḥillī, *Asrār* 223.11–17

[***accepts solution from T4***]

The solution is the one mentioned by one of the verifiers, namely that "true" and "false" apply only to statements that are not identical to what they represent, such that there could be correspondence or a lack thereof between them. If, by contrast, the two are identical, correspondence or a lack thereof between them is inconceivable in the sense of a positive character or its privation, and [only conceivable] in the sense of [mere] negation. Hence, the [Liar sentence] could not conceivably be true or false, and it is therefore true of [the Liar] statement that it is neither true nor false, and that denying one does not imply affirming the other.

[***where does the error occur that gives rise to the paradox?***]

[*According to al-Ṭūsī*] the error (*ghalaṭ*) that arises here is due to the fact that one judges "true" and "false" to apply to something to which both are inapplicable, on the grounds that it does belong to the *kind* (*nawʿ*) of thing to which they might apply [sc. a statement]. Thus, the error is of the type "incorrectly considering predication" (*sūʾ iʿtibār al-ḥaml*).[17]

But I say: the truth is rather that the error in this case is of the type "taking what is accidental in place of what is essential."[18]

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17 "Incorrectly considering predication: this is either to include something—such as a qualification or condition—among the parts of a proposition that is not a propositional part, or to exclude a part that is. For example, someone could take a substance that is accidentally non-existent for one that is absolutely non-existent, thereby removing the qualification 'accidentally' from the propositional part [namely, the subject]. A similar case would be 'Every representation exists in the external world.' It would be true, if 'in the external world' were removed. When taken along with the [complete] predicate, however, it is false." Ḥillī and Ṭūsī, *al-Jawhar al-naḍīd*, 272.18–21.

18 "Taking what is accidental for what is essential: this is to replace a part of a proposition with something accidental to it, something it is true of accidentally, one of its implicates, or one of its implicants. For example, a single essence may have numerous accidents predicated of it, and one may then be led to think that some can be predicated of others universally, like in the case of someone who sees a human of whom the accidents 'white' and 'writer' are true, and is then led to think that anyone white can write, taking 'white' in place of 'human'." Ḥillī and Ṭūsī, 272.14–17.

The Paradox of the Absolute Unknown (*Shubhat Al-Majhūl Al-Muṭlaq/Al-Jadhr Al-Abkam*)

[T9] Al-Rāzī, *Maṭālib,* fol. 22r18–23v10,[19]

The first [*question*]: if "Every subject of judgement (*muṣaddaq bi-hi*) must be conceptually known (*mutaṣawwar*)" were true, then so would "Every conceptual unknown (*kull mā lā yakūn mutaṣawwaran*) cannot be a subject of judgement." But the subject term of this categorical proposition is "every conceptual unknown," and hence the subject-term in this proposition is not conceptually known, despite the fact that we made a judgement about it. This shows that "No conceptual unknown can be a subject of judgement" is false.

Let it not be said: there are two ways to escape. *First*: "conceptual unknown" is [indeed] conceptually known as being conceptually unknown. So when we make a judgement here about conceptual unknowns, they are conceptually known. *Second*: when I conceive of something and judge that "Whoever does not conceive of this thing cannot pass any judgement on it," the subject of judgement is known, since I judge of my concept "Whoever does not conceive [of this thing]" that [such a person] cannot pass any judgement on this thing.

For we say: *the first way out is baseless*. For if I say, "No conceptual unknown can be a subject of judgement," the subject of judgement would either (a) be conceptually known, insofar as it is the subject of judgement, or (b) it would not. (a) In the first case, the judgement that it cannot be a subject of judgement is false, since whatever is conceptually known can be judged to be conceptually known or to be distinct from everything else. On this assumption, "No conceptual unknown can be a subject of judgement," is not a true premise but a false one. (b) If on the other hand the truth is the second option, then the subject of judgement in "No conceptual unknown can be a subject of judgement" is conceptually unknown insofar as it is the subject of the judgement, despite the fact that we judged that [something conceptually unknown] cannot be a subject of judgement. Nonetheless, whatever is conceptually unknown, insofar as it is conceptually unknown, has become the subject of a true, known judgment, which precludes the truth of the judgement, "No conceptual unknown can be a subject of judgement."

19 For this recently discovered "lost part" of the *Maṭālib* see E. Altaş, "In Pursuit of the Lost Volumes of *al-Maṭālib al-ʿāliya*," *Nazariyat* 6 (2020), 169–182. The paradox is also mentioned in [T12] in our chapter on Conception and Assent in this volume.

The second way out is also baseless, because the issue it deals with is not the one the questioner was asking about. The issue raised [in the first question] would be that I make a universal judgement about myself that whatever is conceptually unknown, and that to which my understanding and intellect cannot refer, is something about which I can make no judgement at all. In this case, the subject one judges incapable of being a subject of judgement is what is conceptually unknown *by me*, and what neither my intellect nor my understanding can refer to.

At this point, a second question arises: we find by introspection (*min anfusinā*) that, just as we know things by their definitions and true natures, we may also know them merely by their descriptions and accidents. For example, when we say "A nature is something that requires either movement or the lack thereof, depending on two different conditions," or "Knowledge is an attribute that entails being a knower," the upshot of this remark would come down to the fact that "nature" [or "knowledge"] is something whose specific true nature and particular quiddity, as it is in itself, we do not understand. We understand of it only that its [essence] necessitates this or that. Still, that requires us to judge that this unknown quiddity necessitates a given effect, which in turn requires us to judge a known predicate to belong to this unconceptualized thing.

Moreover, if we know that "The world is created," and "Everything created must have a creator," then the intellect judges that "The world must have a creator." What one has come to know here, then, is that there must be something that is the world's creator; but what that thing is, what its specific quiddity is, that is unknown. Indeed, even if we understand that this essence is neither substance nor accident, neither this nor that, still that true nature would count as unknown, since what one knows would be [merely] the negation of these things, and obviously its specific true nature is not the same as these negations. Moreover, even if we understand that it is knowing and powerful, an originator and a provider, the true nature would still count as unknown, since what one knows is [merely] something described by these attributes. For something to be described is for there to be a relation between the thing and that attribute, but a relation between two things is distinct from both. It has thus been established that this true nature is unknown, despite the fact that we sometimes deny that it is this or that, and other times we affirm that it is this or that. Hence it has been established that something need not be conceptually known in order to be a subject of judgement.

If it is said: If we argue from the creation of the world to its having a creator, then we know that "Something is described as the creator of the world." The subject-term of this proposition would be "something," and its predicate,

"creator of the world." The subject-term, insofar as it is "something," is known. *Then we respond*: what is judged to be "creator of the world" is merely what is understood by "something," and "something" is true of every nature. So if the subject-term of the predicate ['creator of the world'] possessed only the mere sense of "something", it would follow that each "thing" would be the cause and creator of the world; but that is absurd. Rather, that which is judged to be "source of existence and creator of the world" is this particular, specific true nature that in itself is distinct from all others. Further, we have already shown that this true nature is in no way conceptually known, despite the fact that we make it the subject of these known predicates, which undermines the claim that "Making a judgement about something requires knowing it conceptually."

[T10] Al-Khūnajī, *Kashf al-asrār*, 9.10–10.6

[***essential/existential proposition distinction solution***]

If it is said: were it the case that making a judgement about something demanded conceptualizing it (*taṣawwur*) in some respect, it would be true that absolute unknowns (*al-majhūl muṭlaqan*) cannot be a subject of judgement. But that is false, because if its subject term [sc. "absolute unknowns"] is absolutely unknown, then there can be a judgement about absolute unknowns. And if it is known in some sense (*fī l-jumla*)—and anything known in some sense can be a subject of judgement—then that subject which [supposedly] could not have a judgment made about it at all, can be a subject of judgement. Or we might say: if a judgment can indeed be made about [absolute unknowns], then the proposition is false [because it would be self-contradictory]; otherwise, it is impossible to make this judgment too. [...]

[10.1] *Response*: if the consequent in "If making a judgement about something demands conceptualizing it in some sense, then it is true that absolute unknowns cannot be subjects of judgement" is taken as an affirmative existential proposition, [the whole conditional] is false. For no such subject term [sc. "absolute unknowns"] exists extramentally, as it is necessary that every existent is known in some respect, even if only insofar as it is an "existent" or a "thing." Therefore, the truth of the conditional would not follow. But if the consequent is instead taken on the essential reading, it would be true without the mentioned contradiction arising. And likewise if it is taken as a negative proposition, on either reading.

[T11] Al-Abharī, *Tanzīl*, quoted from al-Ṭūsī, *Taʿdīl*, 143.2–12

[***description-referent solution***]

Let it not be said: if it were true that (a) "Every subject of judgement is known in some respect," then it would be the case that (b) "Nothing absolutely unknown is a subject of judgement." But (b) is false, since a contradiction would follow were it true, if its own subject of judgement were absolutely unknown. If it is however known in some respect, it would still follow that (b) is false, since anything known in some respect can be judged as being known in some respect, and therefore (b)'s subject of judgement could be judged as being known in some way [which would appear to contradict (b)].

For we respond: we do not concede that, if [the subject-term of (b)] were known in some respect, (b) would be false. *We say*: why do you infer the falsehood of (b) from "Anything known can be judged as being known in some respect"? We ask because "The subject of judgment is known in some respect"; and "Anything known in some respect can be judged as being known in some respect"; do yield the conclusion "The subject of judgement can be judged as being known in some respect", but [this conclusion] does not entail the falsehood of "Nothing absolutely unknown is a subject of judgement," given that the subject-terms are different.

[T12] Al-Ṭūsī, *Taʿdīl*, 143.13–17

[***commentary on T11***]

I say: the verification of this issue (*al-taḥqīq fī dhālik*) is as follows: "absolute unknowns" can be taken in either of two ways: the referent of the utterance, or the referent together with its description "absolute unknown." According to the second way, [the subject of judgement] is not absolutely unknown, since the description "absolute unknown" is something known, and what is described by something known is itself known insofar as it falls under that description. Hence, the subject of judgement in "No absolute unknown is a subject of judgement," insofar as it is impossible to pass a judgement on it, is to be taken in the first way. But insofar as the subject of judgement can be judged as being impossible to pass a judgement on, it is to be taken in the second way. This is the meaning of "the subject-terms being different."

[T13] Al-Samarqandī, *Qisṭās*, 81.15–83.8

[***criticism of the essential-existential distinction solution, cf. T10***]

They have responded as follows: if the consequent [of "Were it the case that making a judgement about something demanded conceptualizing it in some way, then it would be true that no absolute unknown can be a subject of judgement"] is taken in the existential sense (*khārijan*), we deny that it follows from the antecedent, since the consequent's subject-term would not exist in the external world (*fī l-khārij*). For every external existent is known, insofar as it is an "existent" or a "thing." But if the consequent is instead taken as an essential proposition, then the antecedent does imply the consequent; but the contradiction is prevented, since we make the judgement, "If [absolute unknowns] existed and were absolutely unknown, then they could not be subjects of judgement," while [the subject-term, "absolute unknowns"] is known, and therefore there is no contradiction.

[83] *I say*: this solution is unconvincing, for several reasons. (a) If the consequent is construed as a negative proposition, namely, "No absolute unknown can be a subject of judgement," then the solution will not work.[20] For in that case, the subject would not need to exist in order for the proposition to be true, on an existential reading. (b) Something's existing externally does not necessitate that it be known. Moreover, the condition for an existential proposition is not *knowing* that the two terms exist, but merely that they *do* exist. So something could exist externally and nonetheless be absolutely unknown. (c) If it is possible for an absolute unknown to be somehow known, then why couldn't it exist externally? If on the other hand it is not possible for an absolute unknown to be somehow known, then how could this solution work [since it involves assuming that absolute unknowns are known in some way]?

[T14] Al-Ḥillī, *Asrār*, 13.1–21

[***criticism of the above solutions***]

Solution [cf. T12]: "absolute unknown" can be considered from two different perspectives (*iʿtibār*): the referent of the utterance, or the referent together with

20 We have in general rendered the paradox sentence negatively ("*No* absolute unknown can be a subject of judgement" or "Absolute unknowns can*not* be a subject of judgement"). An affirmative rendering would be "It is impossible for an absolute unknown to be a subject of judgement".

its being described as "absolute unknown." From the second perspective, the referent is not [in fact] absolutely unknown, since the description "absolute unknown" is something known, and what is described by something known is itself known by means of that description. Hence, the subject term in "No absolute unknown can be a subject of judgement," cannot be a subject of judgement, when it is taken from the first perspective, but it is subject to the judgement that it cannot be a subject of judgement from the second perspective. Therefore, the subject is different in the two cases, so there is no contradiction.

I say that this calls for further inquiry. If "absolute unknown" is taken from the second perspective, then it is known. And one may judge of everything known that it can be a subject of judgement; but this is contradicted by the judgement that "absolute unknown," from the second perspective, cannot be a subject of a judgement.

Others have given the following solution [cf. T10, T13]: if the consequent [of "If making a judgement demands conceptualizing the subject and predicate, then no absolute unknown can be a subject of judgement"] is taken in the existential sense, then we deny that it follows from the antecedent, since it would be false. For the subject could be true of nothing at all, since "being known" (*al-maʿlūmiyya*) necessarily holds for every existent. But if the consequent is taken in the essential sense, it does follow from the antecedent, and we would deny that the consequent is false. [...]

[14.21] *But this also calls for further inquiry*. For the consequent should be taken as existential or essential depending on how the antecedent is taken.

[T15] Ṣadr al-Sharīʿa, *Sharḥ Taʿdīl al-ʿulūm*, 8r11–23

[*mental accidents solution*]

If one knows that when that which arises in the mind corresponds [to things outside the mind]—in the sense explained earlier—then it is true, then [one will know] that what corresponds is the same as what arises in the mind. What arises in the mind is subject to the accidental property of "arising in the mind," [just as] the "arising" is accidental to that of which it is a property. Hence, what corresponds is the same as the subject of the accidental property ["arising in the mind"], but the accidental property ["arising in the mind"] should be given no account in whether that property's subject corresponds.

Now, if we conceive of some universal, or of an absolute unknown, in such a way that it corresponds, there can be no doubt that the universal will have become an individual, due to its existing in the mind, and that the absolute

unknown will have become known. However, these accidental properties of "being an individual" and "being known" [which are a result of coming to be in the mind] do not stop their subject [in the mind] from being universal or absolutely unknown, since the universal is what has arisen in the mind, without "arising in the mind" being included in it. And the same goes for the absolute unknown: when it is conceptually known, the fact that it has been conceptually known is not included in it.

Thus, in [the proposition] "No absolute unknown can be a subject of judgement," "can be a subject of judgement" is predicated of the subject [of the accidental property "being known"], but the accidental property of "being known" does not conflict with this predicate, since the subject [of such an accidental property] arises in the mind as it is in itself, namely as "absolute unknown", and the accidental property ["being known"] is not included in it. Therefore, there is no contradiction.

[T16] Al-Iṣfahānī, *Tanwīr al-Maṭāliʿ*, 14r6–8

[*criticism of essential-existential proposition distinction solution*]

We do not grant that everything that exists externally is somehow known, since it could be that there are some things that exist externally to which our minds have never attended, and therefore they have never been conceptually known.

The Paradox of the Totality of All Relations (*Shubhat Majmūʿ al-Nisab*)

[T17] Al-Kātibī and Ibn Mubārakshāh, *Sharḥ Ḥikmat al-ʿayn* (al-Kātibī in Italics), Ed. Zāhedī, 144.18–145.12

[*earliest formulation of the paradox*]

Neither do we concede that, if necessity were a positive property, it would be external [to the essence of a necessary being]. *The explanation that* [*the hypothetical opponent*] *has given*, namely that necessity is a relation, *is to be denied*, since necessity, in our view, is just the same as the quiddity of a necessary existent, for reasons we have explained. *Yet even if this were conceded*, that is, even if it were granted that necessity is in fact a relation, *then we would not concede that the fact that a relation must be distinct from its two relata implies that it be external to both. For the totality* (*majmūʿ*) *of all relations is related to each of the*

relations [*it contains*]*, yet that* [*containment*] *relation is distinct from each* [*of its relata*] *but is still contained in the totality*, otherwise the totality would not be a totality.

Let it not be said: we hold that it is necessary for a relation to be posterior to each of its two relata, not merely distinct from them, which deflects the argument you gave: something posterior to another is necessarily external to it, whereas this is not so for [merely] being distinct. For we would reply: we do not concede that a relation must be posterior to each of its two relata, since the totality of all relations bears a relation to every relation, yet this relation itself is not posterior to its relata, since it is contained within the totality of relations [and is therefore prior to it, just as every part is prior to the whole containing it].

[T18] Al-Ḥillī, *Īḍāḥ*, 77.16–78.5

[***criticism of al-Kātibī; solution from respects***]

Even if it is granted that necessity is a relation, we do not concede that relations must be external to their relata. The totality of all relations, insofar as it is a totality, relates to each of the relations by being that which collects the relations with each other into a totality (*bi-annahu majmūʿuhu maʿa ghayrihi*). This relation—namely, "collecting into a totality (*al-majmūʿiyya*)"—is distinct from each of its two relata, yet still contained in the totality of relations, since we took [it to be a totality of] *all* relations.

This response is extremely poor. To deny that necessity is a relation departs from what we understand (*mafhūm*) by it: for the meaning of "necessity" is [78] a relation between two things. If it is posited that "necessity" is something else, this must be explained. And to deny that a relation must be external to its relata is to deny something self-evident, known to be correct (*amr ḍarūrī maʿlūm al-taḥqīq*). Self-evidence (*ḍarūra*) judges that a relation between two things is distinct from both. The author's [sc. al-Kātibī's] example is no good. Even if the totality of relations is a relation, *insofar as* (*min ḥaythu*) it is contained among the relations, it is not related to the relations, but *insofar as* it is related to them, it is external to the relations.

[T19] Al-Jurjānī, *Ḥāshiyat Sharḥ Ḥikmat Al-ʿAyn*, 292.1–23, Right Column

[***solution from respects***]

There is no doubt that reason (*al-ʿaql*) judges self-evidently that the relation between any two things is, by its very nature (*bi-l-dhāt*), posterior to both of

them—whether the two things be real or merely matters of consideration (*ḥaqīqīyayn aw iʿtibārīyan*), or one of them be real and the other a matter of consideration. This universal proposition is, however, violated by the example given by the author. We must, therefore, either reconcile the universal proposition and the counterexample or give one of them up. *So we say* (and God is the one who grants success): the totality of relations, insofar as it is a mere matter of consideration, exists nowhere besides the mind (*dhihn*). Therefore, the totality bears no relation between itself and another of its constituent relations, except in the mind. Moreover, it is obvious that so long as the mind does not attend to the totality, it can consider no relation between the totality and anything else. Thus, the relation is, in the mind, posterior to its relata insofar as it takes two specific relata, and insofar as it is merely a relation, ignoring its specific relata, it is contained in the totality. When reason considers the totality, it attends to its constituents insofar as they are merely relations, not insofar as they have specific relata. Indeed, it is impossible [for the mind] to do the latter. If this is clear to you, then the meaning of the aforementioned universal proposition is as follows: "Every relation is posterior to its relata insofar as it has specific relata." This proposition does not contradict the fact that a relation could be, from another respect, prior to either of its relata.

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This is the second in a series of sourcebooks charting the reception of Avicenna (Ibn Sīnā, d.1037) in the Islamic East (from Syria to central Asia) in the 12th–13th centuries CE. Moving on from the metaphysical and theological concerns covered in the first book, this volume looks at issues in logic and epistemology in the reception of Avicenna's thought. Across dozens of authors and hundreds of passages, the translated material covers a wide range of topics including the subject matter of logic, the nature of knowledge and self-knowledge, questions in philosophy of language and syllogistic theory, and paradoxes.

Peter Adamson, Ph.D. (2000), University of Notre Dame, is Professor of Late Ancient and Arabic Philosophy at LMU Munich. He has published monographs on the philosophers al-Kindī and al-Rāzī and edited many books, including *Interpreting Avicenna: Critical Essays* (Cambridge University Press, 2013).

Fedor Benevich, Ph.D. (2016), LMU Munich, is Senior Lecturer in Philosophy at the University of Edinburgh. He is the author of *Essentialität und Notwendigkeit: Avicenna und die Aristotelische Tradition* (Brill 2018) as well as of multiple articles and chapters on Avicenna, post-Avicennan Islamic philosophy, and kalām.

Dustin Klinger, Ph.D. (2021), Harvard University, is a British Academy International Fellow at the University of Cambridge. He is the author of *Being Another Way: The Copula and Arabic Philosophy of Language, 900–1500* (University of California Press, 2024) and has published on various topics in post-Avicennan Arabic logic and the history of Graeco-Arabic philosophy.

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