Graziano Ranocchia, Christoph Helmig, Christoph Horn (Eds.)
Space in Hellenistic Philosophy

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Abbreviations

This list contains the abbreviations used in this volume to refer to ancient authors and their works, and to collections of fragments. In the case of authors of a single work references, as a rule, are by author's name only.

Achilles		
	Isag.	*Introductio in Aratum*
Aët.	Aëtius	
Anon.		
	In Cat.	*Anonymi in Aristotelis Categorias commentarium*
Ar. Did.	Arius Didymus	
Arist.	Aristoteles	
	An. Post.	*Analytica posteriora*
	Cael.	*De caelo*
	Cat.	*Categoriae*
	de An.	*De anima*
	GA	*De generatione animalium*
	GC	*De generatione et corruptione*
	Metaph.	*Metaphysica*
	Meteor.	*Meteorologica*
	Phys.	*Physica*
	Resp.	*De respiratione*
	Top.	*Topica*
[Arist.]	Pseudo-Aristoteles	
	Mund.	*De mundo*
	MXG	*De Melisso Xenophane et Gorgia*
Arr.	G. Arrighetti (ed.), *Epicuro. Opere*, Torino (1973^2).	
Aug.	Augustinus	
	CD	*De civitate Dei*
CAG	Commentaria in Aristotelem Graeca, Prussian Academy series, (1882–)	
CAR	E. Maass (ed.), *Commentariorum in Aratum reliquiae*, Berlin (1898)	
Cat.	Catullus	
Cicero		
	Ac.	*Academica*
	De orat.	*De oratore*
	Fat.	*De fato*
	Fin.	*De finibus*

	Inv.	*De inventione*
	Mur.	*Pro Murena*
	ND	*De natura deorum*
	Top.	*Topica*
Cleom.	Cleomedes	
	Cael.	*De motu circulari corporum caelestium*
DG	H. Diels (ed.), *Doxographi Graeci*, Berlin (1879).	
D.-K.	H. Diels / W. Kranz (eds.) , *Die Fragmente der Vorsokratiker*, 3 vols., Berlin (1951–1952[6])	
D.L.	Diogenes Laërtius	
Demetr. Lac.	Demetrius Lacon	
E.-K.	L. Edelstein / I.G. Kidd (eds.), *Posidonius*, vol. 1: *The Fragments*, Cambridge (1989[2])	
Epic.	Epicurus	
	Ep. Hdt.	*Epistula ad Herodotum*
	Ep. Pyth.	*Epistula ad Pythoclem*
	KD	*Kyriai doxai*
	Nat.	*De natura*
Eus.	Eusebius	
	PE	*Praeparatio evangelica*
FDS	K.-H. Hülser (ed.), *Die Fragmente zur Dialektik der Stoiker*, 4 vols., Stuttgart (1987–1988)	
FHSG	W.W. Fortenbaugh / P.M. Huby / R.W. Sharples / D. Gutas (eds.), *Theophrastus of Eresus. Sources for his Life, Writings, Thought and Influence*, 2 vols., Leiden (1992)	
Gal.	Galenus	
	Loc. aff.	*De locis affectis*
	Pecc. dig.	*De cuiuslibet animi peccatorum dignotione et curatione*
	PHP	*De placitis Hippocratis et Platonis*
	Qual. incorp.	*Quod qualitates incorporeae sint*
[Gal.]	Pseudo-Galenus	
	Hist. phil.	*Historia philosopha*
Hero		
	Pneum.	*Pneumatica*
Hes.	Hesiodus	
	Theog.	*Theogonia*
Lucil.	Lucilius	
Lucr.	Lucretius	

Phil.	Philo Alexandrinus	
	Ebr.	*De ebrietate*
Phld.	Philodemus	
	Adv.	*Adversus [...]*
	D.	*De dis*
	Rhet.	*De rhetorica*
	Sign.	*De signis*
	Stoic. hist.	*Stoicorum historia*
Phlp.	Philoponus	
	Cat.	*In Aristotelis Categorias commentarium*
	Ph.	*In Aristotelis Physica commentaria*
Phot.	Photius	
	Bibl.	*Bibliotheca*
Plato		
	Tim.	*Timaeus*
Plaut.	Plautus	
	Merc.	*Mercator*
	Stich.	*Stichus*
Plu.	Plutarchus	
	Col.	*Adversus Colotem*
	Stoic. rep.	*De Stoicorum repugnantiis*
[Plu.]	Pseudo-Plutarchus	
	Plac.	*Placita philosophorum*
Posidon.	Posidonius	
Psellus		
	Omnif. doctr.	*De omnifaria doctrina*
Sen.	Seneca	
	QN	*Quaestiones naturales*
S.E.	Sextus Empiricus	
	M	*Adversus mathematicos*
	PH	*Pyrrhoniae hypotyposes*
Simp.	Simplicius	
	Cael.	*In Aristotelis De caelo commentaria*
	Cat.	*In Aristotelis Categorias commentarium*
	Ph.	*In Aristotelis Physica commentaria*
Stob.	Iohannes Stobaeus	
	Ecl.	*Eclogae*
SVF	H. Von Arnim (ed.), *Stoicorum veterum fragmenta*, 3 vols., Leipzig (1903–1905); vol. 4: indexes by M. Adler, Leipzig (1924)	

Ter.	Terentius	
	Ad.	*Adelphoe*
	Andr.	*Andria*
	Eun.	*Eunuchus*
	Hec.	*Hecyra*
Them.	Themistius	
	Phys.	*In Aristotelis Physica paraphrasis*
Theodoret.	Theodoretus	
	Graec. aff. cur.	*Graecarum affectionum curatio*
Thphr.	Theophrastus	
	HP	*Historia Plantarum*
Us.	H. Usener, *Epicurea*, Leipzig (1887)	

Introduction

Between 12 and 14 April 2012 the International Workshop *Space in Hellenistic Philosophy* took place at Villa Orlandi and Villa San Michele on Anacapri (Naples). The event was co-sponsored by the European Research Council (Starting Grant 241184-PHerc), the Excellence Cluster TOPOI, the University of Bonn, the Alexander von Humboldt Foundation, the University of Naples 'Federico II' and the Humboldt University of Berlin. The participants were Michele Alessandrelli, Keimpe Algra, Richard Bett, Charles Brittain, Ada Bronowski, Giuseppe Cantillo, Aurora Corti, Holger Essler, Dorothea Frede, Christoph Helmig, Christoph Horn, David Konstan, Jun Yeob Lee, Carlos Lévy, Jaap Mansfeld, Graziano Ranocchia, Camilla Serck-Hanssen, Emidio Spinelli, Teun Tieleman, Voula Tsouna, Miira Tuominen, Christian Vassallo, and Francesco Verde.

The subject dealt with by the participants has been the concept of space, and those related to it, as endorsed by the philosophical schools from the period between the end of the Classical age and the early III century AD. The decision to focus on this specific topic arose from the observation that most of the studies on ancient physics have mainly been devoted either to an analysis of the evidence about Presocratic philosophers or to a detailed investigation of the Platonic and the Aristotelian oeuvre. But the decision was also determined by the fact that the Hellenistic reflection on the concept(s) of space stands as an intellectual endeavour of the highest order, which while indebted to the illustrious traditions of earlier centuries in many respects, nonetheless represents a very original development. In addition to this, the need was felt not to confine oneself to the evaluation of the major 'dogmatic' schools which were active in the Hellenistic age (the Lyceum, Epicureanism, and Stoicism), but to extend the hermeneutical focus to also cover those coeval (or even later) authors who, without thematising the concept of space in itself, still made philosophically original use of it either in a constructive (Philodemus, Lucretius) or in a sceptical way (Aenesidemus, Sextus Empiricus).

The papers delivered at the Workshop, duly revised and adapted, have now been brought together in this collection of essays. If there is a *file rouge* which runs through the various contributions, this is not provided simply by the thematic unity of the collection, namely the fact that the subject discussed is the same. And this, because the concept of space was thematised in the Hellenistic age in very different ways which are reflected in the different ways in which the subject is tackled in the present volume. If we can speak of a *file rouge*, this is above all with reference to the problematic approach of most of the contributions. What makes an approach of this kind unavoidable is both the nature of

the subject itself and the status of the secondary literature. As is well-known, pre- or early Hellenistic thinkers such as Aristotle, Eudemus and Theophrastus and Hellenistic philosophers such as Strato, Chrysippus and Epicurus made a remarkable contribution to the reflection on the concept of space, both from a historical and a theoretical point of view. Now, such a contribution is partly vitiated by the obscurity and the abstruseness of the spatial theorisations developed by those thinkers. This lack of clarity is further increased by the fragmentary and often contradictory nature of the surviving evidence.

On the other hand, the existence of significant scholarship on this subject impels specialists to face new hermeneutical challenges. In fact, the progress provided by some important studies to our knowledge of the Peripatetic, Epicurean and Stoic conceptions of space (I am thinking here, in particular, of the studies made by Keimpe Algra[1] and David Sedley[2]) has at the same time raised new puzzles. The essays by Keimpe Algra, Michele Alessandrelli, Teun Tieleman and David Konstan engage with such conceptions by starting from some of these issues. What is also problematic is the particular subject explored by the contributions of Holger Essler and Carlos Lévy, on the one side, and Richard Bett and Emidio Spinelli, on the other. This is an area that, with few exceptions, had previously been left substantially unexplored. The difficulty surrounding this peculiar domain is also due to the fact that the philosophers investigated in it did not deal with the problem of space on its own, since they were either hostile to theoretical speculation (Aenesidemus and Sextus Empiricus) or apparently disinterested in physics (Philodemus), or else engaged in the popularising and teaching of philosophical doctrines (Lucretius). The approach just described distinguishes eight out of the nine contributions published here and is partly balanced by the last of them, which represents a final doxographical synopsis of three key concepts in the Hellenistic physics of space, namely void, place and *chōra*.

The volume opens with an extensive essay by Keimpe Algra about the reception of Aristotle's treatment of place and void in the Hellenistic age and the previous period (*Aristotle's Conception of Place and its Reception in the Hellenistic Period*). Algra's essay first of all has the merit of providing a wide chronological framework in which it is possible to place a good number of philosophers who dealt with topics of spatiality in the period under consideration. The author starts by examining the problematic yet fascinating conceptual core represented by Aristotle's treatment of *topos* in the first five chapters of *Phys.* 4. The occasion for this analysis is offered to Algra by Ben Morison's recent study *On Location*,

1 See Algra 1988, 1992, 1993, 1995, 2000, 2002, 2003, 2012.

2 See Sedley 1982, 1987, 1999, 2010, 2011, 2012 and also Long / Sedley 1987, 31–52, and 294–304.

which is structured as a thorough analysis of *Phys.* 4, 1–5. Morison contends Aristotle's conception of place to be valid and consistent and, accordingly, he defends it from the criticism historically levelled against it. Algra responds by raising four objections against the Aristotelian definition/conception of place as "the first immobile surface of the surrounding body". The first objection challenges the arguments which Aristotle devised against another important conception of place, namely place as a three-dimensional extension. The second objection is the logical consequence of the observation that Aristotle's conception of place as "the first immobile surface of the surrounding body" does not seem to work when applied to the trajectory of moving bodies. The third objection focuses on the alleged immobility of place. The fourth concerns the collocation of the heavens. According to Algra, despite Morison's pressing arguments, this set of objections exposes the difficulties and incongruities of Aristotle's conception. This view is further confirmed by the endorsement of these objections by remarkable exponents of both the pre- and early Hellenistic Peripatos, such as Eudemus, Theophrastus and Strato, and of the late Hellenistic Lyceum, such as Xenarchus. This last philosopher polemically yet fruitfully investigated the Stoic conceptions of place and void, which at that time were already widespread and well-known. The appropriation of these objections took different forms among Aristotle's later followers, depending on the different degrees of awareness of their gravity. Xenarchus, for instance, was conditioned by his perception of the strength and consistency of the rival Stoic position. According to Algra, the difficulties displayed by Eudemus with respect to the possibility of envisaging or grasping place as understood by Aristotle were due to the appeal exerted on him by the notion of place as permanent three-dimensional extension – a notion which, as we have seen, represented the most important theoretical alternative to the Aristotelian position. According to Algra, Theophrastus' aporetic attitude towards Aristotle's notion of *topos* must be traced back to his concern for improving and strengthening the Master's theory. Differently from Morison, who closely assimilates the Theophrastean position on place to the Aristotelian one, contending its orthodoxy, Algra, while noting the substantial continuity between the two notions of place, presents the former as a re-elaboration and an original development of the latter. Despite their doubts about, and criticism of, the definition of place as "the first immobile surface of the surrounding body", Eudemus and Theophrastus continue to operate within the conceptual framework outlined by Aristotle's theoretical project. Strato of Lampsacus, by contrast, seems to have taken a leap across to the other side of the fence. Along with the interesting theory of intra-cosmic micro-voids, our sources ascribe to him an open rejection of the Aristotelian conception of place and an acceptance of the notion of place as a permanent three-dimensional extension. It is as if Strato'

doubts had overcome his doctrinal loyalty, making it impossible for him to hold fast to Aristotle's theory. Actually, just like Eudemus and Theophrastus, Strato too raises his criticism from within an Aristotelian perspective; but whereas the two other philosophers remain well anchored to this framework, Strato ultimately abandons it. In the late Hellenistic period, as Aristotle's acroamatic works came to enjoy a wider circulation and Stoic cosmology became predominant, Xenarchus of Seleucia, who was strongly interested in the problem of void, apparently went full circle by embracing the opposite position (as Paul Moraux first suggested). He regarded some of the features of the Stoic conception (such as the thesis of the existence of the extra-cosmic void and the idea, probably first endorsed by Chrysippus, that the occupiable void and the occupying body are not correlative to each other) to be real *cruces* for the Aristotelian conception, i.e. theoretical knots which neither Aristotle nor his successors had been able to adequately solve. The richness of the Peripatetic contribution to the problem of place both from a doctrinal perspective (against the Stoics) and from an aporetic point of view (against Aristotle) is witnessed, according to Algra, by Sextus Empiricus in the accounts contained in *PH* 3, 19–35 and *M* 10, 1–36. Sextus' criticism of the conception of place as three-dimensional extension, a position mainly maintained by the Stoics, derives first of all from a set of arguments brought forth by an earlier sceptical tradition. Sextus copiously draws from this tradition. Yet, Sextus' criticism incorporates – albeit with a clear anti-dogmatic purpose – a Peripatetic-like ontology and can be traced back to Aristotle's discussion and rejection of this conception (which obviously was not yet a Stoic one at the time) in Book 4 of *Physics*. Likewise, the arguments levelled by Sextus against the Aristotelian conception of place "as a surrounding surface" (*periektikos*), based once again on the same sceptical sources, can be traced back to the criticisms levelled against this same conception within the Peripatetic school itself. According to Algra, all this confirms the marked doctrinal and polemical vitality of the Lyceum in the Hellenistic and post-Hellenistic age.

Michele Alessandrelli's essay (*Aspects and Problems of Chrysippus' Conception of Space*) investigates the concepts of place, void and *chōra*, that is to say the pivots of Chrysippus' physics of space. By analysing the texts recording the Stoic definitions of these spatial entities, Alessandrelli sets out to reconstruct the most coherent possible picture of the Chrysippean conception. According to this picture, highly formal and counter-intuitive spatial concepts (those of void and place) coexist, not without tensions, with that of *chōra*, a much more informal and intuitive one. According to Alessandrelli, the notion of *chōra* was introduced by Chrysippus in order to do justice to the way in which living beings experience extra-cosmic space, conceived as liveable space structured in regions that prove at times crossable, at others not. What is noteworthy is the following

fact: while the first two elements are incorporeal for the Stoics, our sources are silent about the ontological status of *chōra*. This may reflect some hesitation on the part of Chrysippus himself, which he never managed to free himself from. From the analysis of these concepts and the drawing of some critical comparison with the interpretation of them provided by Keimpe Algra, the paradoxical nature of Chrysippus' conception of place and the problematic character of his conception of *chōra* emerge in some way.

No less problematic is the state of the sources which Teun Tieleman investigates in his contribution about Posidonius' conception of void (*Posidonius on the Void. A Controversial Case of Divergence Revisited*). Tieleman starts from the apparent irreconcilability between some authoritative witnesses which seem to present the thesis according to which the void surrounding the cosmos is infinite as the official, orthodox position of the school and a passage from Aëtius in which Posidonius is reported as instead claiming that void is finite. Tieleman seeks to overcome this apparent contradiction by assuming that the situation must originally have been more complex than what our sources allow for. He does not exclude that the second thesis ascribed to Posidonius – that of the finitude of void – may have simply represented an *ad-hoc* response to Panaetius' rejection of cosmic conflagration. This found its *raison d'être* in the fact that, for Panaetius, the infinitude of void would expose the conflagrating cosmos to the drift of an uncontainable dispersion. This kind of response on Posidonius' part would not have jeopardised his adhesion to the official position of the school.

David Konstan (*Epicurus on the Void*), distances himself from David Sedley's influential thesis according to which "space is a continuous matrix that extends uniformly throughout the universe, and is either filled, when it is occupied by matter, or empty, when matter is absent". Konstan argues instead that space, *qua* complement to matter, is where matter is not. In doing so, he raises a series of questions. The first concerns the problem whether space according to Epicurus plays an active role in separating atoms from each other. To this question Konstan gives a negative answer, by referring to the doctrine of minima. The second question focuses on whether space has an intrinsically downwards directionality for Epicurus. In this case too the author's answer is a negative one, for this directionality is a property of atoms, and not of space. The third question is whether space for Epicurus supplies moving atoms with an absolute framework of reference. In this case Konstan's answer is affirmative, because Epicurus conceives of space as something static. The last question is whether Epicurean space has something to do with the density of composed objects. In this case Konstan seems inclined to prudently assign an active role to space (*contra* Sedley), as a concomitant cause of the density of aggregates.

With Holger Essler's contribution (*Space and Movement in Philodemus'* De dis *3: an Anti-Aristotelian Account*) we approach that area of Epicureanism in which developing a complete and coherent theory about spatial concepts is no longer the main concern. As far as we know, in Philodemus an independent investigation about physics, and hence also about space, is absent. Still, Essler argues for the presence in Philodemus of physical conceptions which can be traced back to both the physiological paradigm of Epicurus and to some Aristotelian or Peripatetic physical and biological models. If there is any hope of pinning down Philodemus' usage of spatial concepts, it is on the basis of his broader engagement with general problems related to physics. In the Garden there was a close correlation between physics, understood as *physiologia*, and ethics. This connection is present only in the theological part of Philodemus' oeuvre. For this reason, Essler focuses his attention on two long consecutive passages of Phld. *D.* 3, the first concerning the space of gods, the second their movement. The author's analysis develops through a strict comparison between Aristotle's conception of natural place (in both its physical and biological version) and Philodemus'. In Philodemus, unlike in Epicurus and Aristotle, we do not find any explicit theory of space and place. However, Essler illustrates the significant use which he makes of the concept of natural place both for polemical purposes (against Aristotle) and in a constructive way. It is remarkable that Philodemus uses the Aristotelian concept of natural place in its biological sense as a polemical weapon against the equally Aristotelian concept of natural place in its physical sense, in order to establish that particular kind of natural place which is the *metakosmion*, i.e. the dwelling of the gods, obviously conceived in Epicurean terms. Essler thus accounts for the conceptually hybrid character of Philodemus' description of the *metakosmia*. As a matter of fact, this description distinguishes itself not only for its loyalty to Epicurus' fundamental tenets, but also for the use (already made by Epicurus himself) of Aristotelian arguments for anti-Aristotelian purposes – in particular, to criticise Aristotle's conception of the stars as deities.

In the essay by Carlos Lévy (*Roman Philosophy under Construction: the Concept of* Spatium *from Lucretius to Cicero*) the way in which Lucretius deals with space is not investigated by establishing a comparison with Epicurean texts concerning the same subject. Lévy discards this kind of approach because it treats Lucretius not as an author capable of rethinking important issues of Epicurean dogmatics in an original way, but simply as a more or less faithful follower of the orthodoxy of the Garden. According to Lévy, a discussion of the problem of space in Lucretius enables one to do full justice to the philosopher from this point of view. The author's study is structured in three steps. Firstly, he points out the novelty and the significance of Lucretius' conception of

space by a comparison with the previous Latin poetic tradition, to which Lucretius himself was initially indebted. Secondly, he explains the way in which Lucretius tried to turn the concept of space into a philosophical concept. Thirdly, he makes another comparison, this time between Lucretius and Cicero, noting the latter's fidelity to an archaic way of understanding the term *spatium*. This idea was surpassed by Lucretius through his conceptual innovation. What emerges from this picture, according to Lévy, is the relevance of the Latin context for reconstructing Lucretius' contribution to the elaboration of a fully philosophical concept of space. The interesting fact is that Lucretius drew upon the Epicurean tradition in an original manner in order to distance himself from the ways in which poets anterior to him – such as Ennius, Plautus, Terence and Lucilius – had employed the term *spatium*. This is the equivalent of the Greek term *mēkos*; but whereas *mēkos* has only a secondary place in the Epicurean physics of space, according to Lévy *spatium* becomes a central concept in Lucretius' thought. And this is not all. The concept of *spatium* which Lucretius himself had initially shared, and from which he later distanced himself, was a temporal concept of space. This is remarkable for two reasons. In the first place, because this operation marks the transition from a somehow experiential notion of space to a theoretical and philosophical one. In the second place, because Lévy actually presents Lucretius as the inventor of what was destined to become the prevalent philosophical and scientific notion of space in the later Latin Western tradition.

Richard Bett's contribution (*Aenesidemus the Anti-Physicist*) introduces the section about neo-Pyrrhonism and the possible use of spatial concepts by its most renowned exponents. While it is true that Aenesidemus discussed arguments pertaining to physics, his purpose was to demolish the dogmatics' trust in their own physical conceptions. Bett wonders whether this sceptical enterprise of demolition also implied or presupposed a discussion about concepts such as place or space on Aenesidemus' part. First of all, the author establishes with a good degree of certainty the Aenesidemean authorship of the ten modes or tropes (to be understood not as an *ex-novo* invention, but as a re-organisation of these tropes into argumentative schemes for sceptical purposes), as summarised and related in two slightly different ways by Sextus Empiricus and Diogenes Laërtius. In particular, Bett focuses on the fifth trope concerning positions, places, intervals or distances (depending on which version one relies on, whether Sextus' or Diogenes'). According to Bett, the examples used in the trope under discussion have the kind of destabilising effect on dogmatic certitudes which one would expect them to have only when set within a general sceptical framework, namely the one provided by the core of the fifth trope. This propensity relativises our observation of things as always occurring either in a certain place or

in a certain position or at a certain distance. This spatial conditioning which affects things makes it impossible to penetrate their real nature. It is interesting that Aenesidemus avails himself of the concept of place almost as though it were a relativising parasite which contaminates and jeopardises our absolute knowledge of things. If the latter are never free of conditioning and in this sense knowable but are always in a certain place, then our knowledge of things is never pure. On the contrary, it is always vitiated by the places in which things find themselves. These places, from the observer's perspective, relativise things in a variety of ways and make it impossible to determine their invariant nature. Now, Aenesidemus did not need to know what place is in order to advance this strategy. Rather, this very strategy does not require us to know anything about place other than the fact that it conditions the nature of those things which lie within it, so as to make them impenetrable. According to Bett, the discussion about these spatial concepts was in some way preliminary to that concerning the basic principles of dogmatic physics.

Emidio Spinelli devotes his contribution (*Φαινόμενα* contra *Νοούμενα: Sextus Empiricus, the Notion of Place and the Pyrrhonian Strategy at Work*) to the problem of place as the philosophical notion discussed in *PH* 3, 119 – 135. The author provides an overview of some of the hermeneutical results reached by Keimpe Algra in a paper delivered at the XI *Symposium Hellenisticum* in 2007.[3] The account examined by Spinelli is probably earlier than that contained in Book X of *Against the Mathematicians*. This stands out as being more accurate and complete compared to the one in the *Outlines of Pyrrhonism*. Spinelli's essay, therefore, complements that of Algra and – together with it – constitutes a detailed and exhaustive commentary on Sextus' treatment of the philosophical concept of place. While for Aenesidemus – as we read in Bett's contribution – place fatally relativises the nature of things, making them impenetrable, Sextus' discussion of the subject is dominated by the contrast between philosophical theories of place (the proper target of Sextus' sceptical criticism) and, as it were, the *synētheia* of the word 'place'. Usual practice forces us to understand this word not as signifying a physical or metaphysical entity whose nature can be investigated and known, but simply as a linguistic and phenomenal device. This is correlated, through the phenomenon of designation, with an intuitively and experientially ineliminable element in our ordinary relationship with reality, that is to say an ingenuous and reflexive phenomenon which most human beings experience, with the exception of dogmatics. Spinelli's contribution represents, in fact, a study of the efforts made by Sextus to speak of place with a language

3 See Algra 2014.

different from that of the dogmatic tradition, which was intrinsically marred by insuperable *diaphōniai*. Sextus' entire endeavour is aimed at purging language of its substantialist conditionings by putting it on the same level as the phenomena to which the Pyrrhonian sceptic conforms without aspiring to surpass them. What is noteworthy is the way in which, in order to describe place, Sextus introduces formulas and expressions referring to the phenomenal domain of usual practice. This strategy frees language from its obsession with abstraction and its tendency to separate things which phenomena attest to be always interconnected. Speaking about place, therefore, means speaking about how things always reveal themselves to us, namely as being in a certain place. This rather original interrelationship between phenomenal elements imposes on language formulas and expressive choices of an anti-theoretical kind.

The doxographical synopsis provided by Jaap Mansfeld (*Doxographical Reverberations of Hellenistic Discussions on Space*) concludes the volume. The essay concentrates on Aristotle's legacy and the issue of what and how much influence he exerted on ancient doxography, with particular reference to Aëtius. Aristotle's philosophy is the starting point for Aëtius' account of Presocratic, Classical and early Hellenistic doctrines about void and place. Yet, whereas Aëtius' treatment of void (1, 18) and place (1, 19) has precise parallels in Aristotle's *Physics* and *De caelo*, this is not at all the case with his discussion of *chōra* (1, 20). As far as Aëtius' chapter about void (1, 18) is concerned, Mansfeld refers to Arist. *Phys.* 4, 213a12–15, a passage which sketches the programme for a correct study of the problem of void, based on three related questions: "whether it is or not, and how it is, and what it is". The first question is implicitly under discussion, according to Mansfeld, in the above chapter and explicitly at 2, 9*. The question of "how it is" has as its subject the two categories of 'where' (i.e. whether void lies within the cosmos or outside it, or both) and of 'how much' (i.e. whether void is of unknown or infinite size, or big enough to allow the expansion of the cosmos). The category of *ousia*, corresponding to the question of "what it is", does not emerge in this chapter. In order to find it discussed in relation to void, it is necessary to turn to 1, 20, a passage which presents the Stoic definition of void as "a vacancy of body". The agenda for the chapter about place (1, 19) was set again by Aristotle, with the above three questions raised about void. By examining the three definitions of place provided by Plato, Aristotle and Strato, this chapter prominently focuses on the category of substance, which is directly linked to the question of "what it is". Also at play here is the category of "how it is", which poses the paradoxical problem of what the place of place might be. Totally absent, instead, is the question of the existence of place, which was central for Aristotle. It is remarkable that in this chapter Hellenistic philosophy is only represented by Strato. The section about *chōra* and

Aëtius' chapter on it (1, 20) set out from an observation regarding the enigmatic structure of this concept. It represents a thoroughly Hellenistic *vis à vis* between Stoics and Epicureans. Now, this contrast finds a parallel (though not a perfect one) in Sextus Empiricus, but not in Epicurean texts. Mansfeld observes that it could have been deliberately exaggerated in order to simulate a doxographical *diaphōnia*. The contribution ends with an appendix containing the critical edition of chapters 1, 18–20 and 2, 9*.

While fully aware of the problematic character of the subjects discussed and of the interpretations offered in many of the contributions to this volume, the co-editors and myself hope that this book may serve as a new starting point for future studies on ancient physics, paving the way for further lines of research.

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Naples, April 2014

Keimpe Algra

Aristotle's Conception of Place and its Reception in the Hellenistic Period

1 Introduction

At first sight the discussion of place in Aristotle *Phys.* 4, 1–5 may seem patchy and its style at times crabbed. On closer view, however, its contents acquire coherence through the conscious and explicit application of what has been labelled Aristotle's 'dialectical method'. It is no coincidence that the discussion of place has been one of the key examples in G.E.L. Owen's classic study of this method,[1] for Aristotle is more explicit than he usually is in outlining his procedure:

> We must try to make our inquiry in such a way that the 'what-it-is' is provided, the *aporiai* are solved, the apparent facts about place are accounted for, and, finally, so that the reason for the difficulty and for the problems around it are clear (Arist. *Phys.* 4, 211a7–11).

Aristotle practices what he preaches: he provides the 'what it is' in the form of a definition or account ("the first immobile boundary of what contains", *Phys.* 4, 212a20); he solves the *aporiai* (at least for this, his own, conception of place, *Phys.* 4, 212b22–29); he accounts for the apparent facts (at least for those apparent properties that *genuinely* apply to place, i.e. the set of properties specified at 210b33 ff.); and he provides us with an explanation of the difficulty of the subject, in the following passage:

> Place seems to be something profound and difficult to grasp, both because the notions of matter and form present themselves together with it (παρεμφαίνεσθαι), and because of the fact that change of position of a moving body occurs within a surrounding body which is at rest; for [from this] it appears to be possible that there is an extension in between which is something other than the magnitudes which move. Air, too, contributes to this suggestion, by appearing to be incorporeal; place seems to be not only the limits of the vessel, but also that which is in between, which is considered as being void (Arist. *Phys.* 4, 212a7–30).

The problem seems to be, in other words, that the phenomena are unclear to the extent that in everyday thinking and speaking various conceptions of place – in-

1 Owen 1961. On the structure of the account of *Phys.* 4, 1–5 see also Algra 1995, 170–181, and Morison 2002.

cluding the most important rival conception of place as three-dimensional extension ("that which is in between, which is considered as being void") – readily come to mind and may be used *promiscuously*. In fact, and as we shall see, the *corpus Aristotelicum* itself does not always stick to what in *Physics* 4 comes out as the correct account. Nevertheless it is here, in *Physics* 4, that the various conceptions of place are disentangled and examined, and that we are told which one can be coherently maintained.

This is not to say that everything is clear and convincing, and it should come as no surprise that the conception with which Aristotle eventually comes up, place as the first immobile surface of what surrounds (τὸ τοῦ περιέχοντος πέρας ἀκίνητον πρῶτον, 212a20), had a mixed reception in later ancient and medieval thought. It was dutifully reported and defended in such Aristotelian scholastic texts as the commentaries of Alexander of Aphrodisias (of which only fragments remain) and Themistius, and even in the exegetical part of the sixth century commentary of Philoponus.[2] Yet, in a separate excursus, nowadays known as the *Corollary on Place*, this same Philoponus launched some devastating objections against the Aristotelian conception of place. The formidable Simplicius was no less critical, although he came up with a different alternative theory. Some points made in these later ancient texts resurfaced in the stock *quaestiones* of the medieval commentary tradition.[3]

The subject of the present paper is the equally mixed reception of Aristotle's accounts of place and void in the Hellenistic period. Engagement with Aristotle's theory in this period appears to have come in at least two stages. The first concerns the interpretation of the theory of *Phys.* 4, 1–5 by Aristotle's earliest successors. I will discuss these early reactions, mostly on the basis of the evidence provided by Simplicius (in particular in the *Corollary on Place* which rounds off his commentary on *Phys.* 4, 1–5), in sections 3 (Eudemus), 4 (Theophrastus) and 5 (Strato) of this paper. The second stage appears to have started in the first century BC – after the resurfacing of the *corpus Aristotelicum* – and to have taken the form of a debate between Peripatetics and Stoics on place and on the Stoic conception of an extra-cosmic void. Here again it is Simplicius who offers part of the evidence – on the Peripatetic Xenarchus of Seleucia and on anti-Stoic arguments assembled by Alexander of Aphrodisias – whereas other relevant information is

2 Philoponus took it to be his duty to expound and explain Aristotle's position to the best of his abilities in his commentary proper before criticizing it in the separate excursuses which we now know as the corollaries: see his programmatic remarks at *Cat.* 6, 30–35. On the relation between the commentary proper on *Phys.* 4, 1–5 and the *Corollary on Place* see Algra / Van Ophuijsen 2012, 2–6.

3 On the medieval reception of the theory, see Grant 1981.

provided by Cleomedes in his first or second century AD handbook of Stoic cosmology. This debate will be the subject of my section 6. Finally, the sceptical accounts of place in Sextus Empiricus' work may complement our picture of the late Hellenistic situation, in so far as they as well basically oppose the Stoic and the Aristotelian positions. They will be discussed in section 7.

I will start out, however, with a systematic discussion (section 2) of four rather problematic aspects of Aristotle's account, each of which seems to have left its traces not only among the commentaries of late antiquity, but also in the discussions within the Hellenistic Peripatos (section 2). This will force me, in passing, to come to terms with Ben Morison's challenging 'revisionist' interpretations of Aristotle's theory of place (his book *On Location* now being the most extensive in-depth study of *Phys*. 4, 1–5). According to Morison people have been too quick to criticize the theory, which he thinks was actually quite good.[4] In a separate article he also discusses the evidence on Theophrastus, claiming, contrary to what has thus far been the mainstream interpretation, that Theophrastus defended Aristotle's conception of place unrestrictedly.[5] Although my conclusion will be that this interpretation, though sympathetically charitable, gets insufficient support from Aristotle's text and from the evidence on the early Peripatetic reactions to it, I am convinced that the challenge of engaging with Morison's arguments will help us to sharpen our view both of the problems and arguments involved and of the nature and limitations of the evidence.

2 Problems in Aristotle's account

Aristotle's conception of place is rooted in some sensible ways of using the conception of place in ordinary speaking and thinking. When we say that a fish is swimming 'in the water' or that I am 'in Athens', we are speaking of a thing's surroundings as its place. However, in so far as Aristotle's account makes a point of transforming such general ways of speaking into a more technical philosophical conception by specifying a thing's place in the proper sense as "the first immobile surface of the surrounding body", it can be seen to run into difficulties on at least two accounts. To begin with, it is not clear why this particular conception should be favoured over other conceptions as the only correct one, more particularly why the most commonly accepted rival conception – place

4 Morison 2002; the blurb text even describes Aristotle's discussion of place as being "of enduring philosophical interest and value".

5 Morison 2010.

as an independent three-dimensional extension – should be discarded. Secondly, specifying place as a first surrounding surface brings in problems of its own. For one thing, such a surrounding surface disappears once the emplaced body has been removed (so that it is not stable in the required sense of something that can be left behind and re-filled); for another, such a surface is the surface of a mobile substance (so it is not clear how it can be immobile, as it should be, also according to Aristotle); and finally, some bodies, such as the outer sphere of the heavens, do not have a surrounding surface (so that not every physical substance is in a place, as should be the case). Let us examine each of these objections – numbered as (i)-(iv) – in succession.

(i) Aristotle's arguments against the conception of place as a three-dimensional extension are problematic. The arguments used by Aristotle to eliminate the most important rival conception (place as an underlying three-dimensional extension) are unsatisfactory.[6] The text at issue is very unclear; and the arguments it contains do not appear to hit the mark. The two main arguments used in the fourth chapter of *Phys.* 4 (211b19 – 29) seem to be these:

(1) On this conception of place, there would be an infinity of places in the same spot (ἐν τῷ αὐτῷ ἄπειροι ἂν ἦσαν τόποι, 211b20 – 21) for in a continuous emplaced body we can distinguish an infinity of parts which will all have their own places, so that we have an infinity of juxtaposed (and, we may presume, in fact also overlapping) three-dimensional places "in the same spot"; and

(2) On this conception of place, place will be moving (ἅμα δὲ καὶ ὁ τόπος ἔσται μεταβάλλων, 211b23).

Elsewhere in the same book, in the course of his discussion of void in chapter 8, Aristotle uses a different route to reach the absurd conclusion of an infinity (or at least: an indefinite number) of places "in the same spot". This time he seems to be thinking of a doubling of *three-dimensional* extensions which can go on *ad infinitum:*

(3) "What will be the difference between the body of the cube and the void and place which are equal to it? And if two things can behave like this, why cannot any number of things coincide?" (216b9 – 11).

6 Aristotle's arguments were pertinently criticized by Philoponus at the beginning of his *Corollary on Place* at *Ph.* 557, 12 – 563, 25.

It is not too difficult to see, however, that (2) and (3) are not straightforwardly convincing in that they simply presuppose Aristotle's apparent conviction that there is only one kind of three-dimensional extension, viz. the extension of substances themselves. Elsewhere Aristotle argues that it is the phenomenon of things moving through air that has caused the mistaken supposition that things can move through mere extension, for air seems to be incorporeal. But, or so he claims, there is no extension apart from the extension of substances: "what is in between a place is whatever body it may be, but not the extension of a body" (σῶμα γὰρ τὸ μεταξὺ τοῦ τόπου τὸ τυχόν, ἀλλ᾽οὐ διάστημα σώματος, *Phys.* 4, 212b26 – 27).

This brings us to objection (1). It is defended by Ben Morison:

> Aristotle was right to argue that on the *diastēma* theory of place a particular mass of water, for example, will have an infinity of internal places 'hanging around', whereas in truth the parts of the water are not the right sort of item to have a place.[7]

There are two claims involved here. The last claim, about parts of a continuous substance not being the sort of things to be emplaced, may be true on Aristotle's own principles. And indeed, even Philoponus – as we know, an adherent of the *diastēma* view – subscribes to the Aristotelian idea that only substances have places.[8] But this very example shows that the claim that randomly defined parts of continuous substances all have places of their own is in itself not a necessary concomitant of the conception of place as an independent three-dimensional extension. Moreover, even if we assume, with Aristotle, that it is, there is still no compelling reason to find it intrinsically problematic. On the contrary, one might argue that it is rather the Aristotelian view, with its *denial* that the parts of continuous substances have places of their own, that goes against common intuitions on the way the concepts of place and position are to be used.

Morison's first claim, that Aristotle is right about the infinity of internal places 'hanging around', is more puzzling. For it is simply not true that the conception of place as a three-dimensional extension involves an *actual* infinity of overlapping or nested places. Even from an Aristotelian point of view the *diastēma* view would involve – if we take it to involve a view about the emplacement of parts at all – that the (only *potentially* infinite number of) parts of a continuous substance, however specified, would occupy (a potential infinity of) correspondingly specified parts of one and the same absolute extension, *not* that an *actual* infinity of places co-exist or 'hang around'.

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7 Morison 2002, 132.

8 See the evidence quoted in Algra 2012, 9.

What are the reasons for Aristotle's odd claims, and what is the reason why they were accepted by at least part of the subsequent Aristotelian tradition? We may note that the rival conception of place as a self-subsistent three-dimensional extension could not be easily integrated within an Aristotelian ontology: being self-subsistent, such a place or space could not be considered as an accident, i. e. a quantity; but neither could it be seen as a substance in the sense of a *synolon* of form and matter. Philoponus acknowledges this in his *Corollary on Place* but argues that we should then conclude that, in the face of the strong arguments in favour of the existence of space as a three-dimensional extension, there is something wrong with the ontological premise that a quantity cannot subsist by itself (*Ph.* 578, 5 – 579, 17). Note, incidentally, that in *Phys.* 4 Aristotle does not explicitly make the point about the ontological inconceivability of place as a self-subsistent extension, although the point may be *implied* in the *aporia* in chapter 1 which claims that it is unclear what genus we should ascribe to place: it has three dimensions but is not a body (209a4 – 6).

At the beginning of the sixth century it was the weakness of Aristotle's arguments against the rival conception of place as an independent extension that triggered the excursus on place in Philoponus' commentary which is nowadays known as the *Corollary on Place*. As we shall see (sections 5 and 6 below, pp. 38 – 47), he was anticipated in this respect by the Hellenistic Peripatetics Strato of Lampsacus and Xenarchus of Seleucia. For many Aristotelians, however, the view that place was a separate extension apparently *could* not be true and that may have helped them to swallow Aristotle's rather limp refutation of this view in *Physics* 4. Thus, we have no evidence that Eudemus or Theophrastus did not follow Aristotle on this point of his account. And as we shall see (section 7 below, pp. 47 – 51), Sextus Empiricus' (partly parallel) accounts of place in *PH* 3, 119 – 135 and *M* 10, 1 – 36 show us that also the late Hellenistic arsenal of sceptical arguments from which Sextus could draw still used versions of Aristotle's arguments against the conception of place as a three-dimensional extension, although now directed against the Stoics.

(ii) Place and the explanation of motion. A second problem emerges once we realize that Aristotle's theory of place appears to be primarily a theory of the *location* of *static* bodies. Or perhaps we should say that it appears to work only in cases where we actually do find a more or less stable surrounding surface, whereas it is not easy to use his conception of place to describe the trajectory of bodies *in motion*. Nevertheless the explanation of motion, or change in general, is explicitly adduced as the *raison d'être* for introducing the subject within the

context of the *Physics* in the first place.[9] Why would the theory count as defective in this respect? But also: why would it be that many Aristotelians did not see this? Let us have a look at the difficulties first. Using Aristotle's conception of place, we should describe a body in motion as traversing an infinity of instantaneous two-dimensional places. In his *Corollary on Place* Philoponus takes Aristotle to task for the element of two-dimensionality:

> If place is the boundary of the container and is not some different extension between the boundaries over and above the bodies that come to be in it, then clearly during my motion from Athens to Thebes the parts of air that yield up their own place to me (for motion is a change of places and a continuous exchange) yield up nothing but surfaces. But when surfaces alone are put together, even an infinite number of them, coinciding with each other they make the whole no bigger. So how can the moving body move forwards? (Phlp. *Ph.* 567, 12–18).[10]

It is perhaps no coincidence that in contexts like these, where we are describing the *trajectory* of a moving body, Aristotle sometimes consciously or unconsciously resorted to the very concept of place as a *three-dimensional* extension which he had rejected for theoretical reasons.[11]

> [...] the celestial element is eternal and the spatial path (*topos*) through which it moves is endless, though always complete, while the terrestrial bodies each have their distinct and limited regions (*topous*) (Arist. *Meteor.* 339a25ff.).

Richard Sorabji focuses on another problem by pointing out that the surrounding surfaces in such a process are *instantaneous*.[12] Hence, a boat moving through water should be taken to traverse a series of instantaneous limits, so that it could never return to a place, for once a place is left it no longer exists. This may not count as an odd result, if we recall the explicit claim that "place is together with the object, for the limits are together with what is limited" (ἅμα τῷ πράγματι ὁ τόπος. ἅμα γὰρ τῷ πεπερασμένῳ τὰ πέρατα, *Phys.* 4, 212a29–30). But it *does* appear to be an odd result, if we take account of a different requirement also introduced by Aristotle, namely that place should be something that can be left be-

9 Cf. *Phys.* 3, 200b20: "Change seems to be impossible without place and void and time, and in any case place, void and time are pervasive and common to all kinds of change, so for both these reasons we shall obviously have to look into each of them" (transl. Waterfield).

10 Here, and in the rest of this contribution, references to the texts of Themistius, Philoponus and Simplicius are to the page and line numbers of the Berlin *CAG* edition.

11 Cf. Philoponus *Phys.* 567, 8–29. On unorthodox conceptions of place in the *Corpus Aristotelicum* see Algra 1995, 182–188.

12 See Sorabji 1988, 190.

hind: "the place where the thing is can be left by it, and is therefore separable from it" (*Phys*. 4, 211a3).[13] So the problem is simply this: in what sense does Aristotle's theory allow me speak of the place I occupied this morning while standing in the garden, or of the place where I will be tonight while having dinner, if the relevant surrounding surfaces no longer exist or not yet?

It may be worth our while to have a look at the way in which Ben Morison's charitable interpretation of Aristotle deals with this problem. The central point of his interpretation is that, according to Aristotle, place as the surface or limit "of what surrounds" can in practice be specified in various ways and that in the end "Aristotle identifies the proper place of x at time t as the inner limit *of the universe* at which it is in contact with x at t" (my italics).[14] In other words, "the surroundings (*to periechon*) to which a body must be related in order to say where it is are *the whole universe*" (again, italics mine).[15] This allows him to dodge the objection about instantaneous places by claiming that place as a limit is something which the universe can assume and re-assume: "shapes, sizes, limits, colours etc. are assumed – sometimes instantaneously – and they can be re-assumed. Our interpretation is safe from this objection".[16] Perhaps this does offer a way to make sense of the notion of (returning to) the 'same' place. However, the point remains that also on this interpretation places are hardly things that can be identified once they have been left, or before they are reached.

As we will see, the evidence suggests that Eudemus of Rhodes was sensitive to this problem. But apparently for him, as well as for the other 'mainstream' followers of Aristotle, this problem did not count as fatal. A possible reason for this may have been that being able to indicate the location of *static* substances was precisely what most Aristotelians expected from the theory of place, even within the context of a theory of locomotion. After all, Aristotle and Aristotelians were used to analysing changes, including locomotion, first and foremost in terms of their starting point and end point. See, for example, the analysis of change in *Phys*. 1 (esp. chapter 1, 5) as a process occurring between opposites. Within such a general descriptive framework Aristotle's conception of place sufficed to describe the situation at the outset as well as the situation at the end of a process of locomotion. So even those, like Eudemus, who noted that the account of

13 One may compare the earlier claims that place is "different from all the things that by replacement come to be in it" and something "which they alternately leave and enter" (*Phys*. 4, 208b1–8), and the fact that he more than once describes place as a kind of vessel that can be filled, but also left behind (212a14–15).

14 Morison 2002, 149.

15 *Ibid*., 171.

16 *Ibid*., 165.

place as a two-dimensional surrounding surface involved some counter-intuitive aspects, may have found it workable for all practical purposes in the context of Aristotelian physics.

(iii) The required immobility of place. Even if, for the reasons indicated, these first two general objections may have carried little weight within the context of Aristotelian physics, there were some other problems which remained pressing also within an Aristotelian context and which accordingly left their traces more widely in the commentary tradition. First, there is the problem of saving the required immobility of place. At some point in the middle of his account in chapter 4 of *Phys.* 4 Aristotle adds the requirement that place should be immobile (βούλεται δ'ἀκίνητος εἶναι ὁ τόπος, 212a18), so he qualifies his definition of place accordingly: it is not just the surface of the surrounding body, but the *immobile* surface of the surrounding body. In the same context he adds that a thing located in a mobile place is in a vessel rather than in a place. So a vessel is a mobile place and a place is an immobile vessel. But how can this distinction be applied in practice? After all, in most circumstances a thing's surroundings consist of mobile substances. Even in the case of the layers of the elements we see that water and air are mobile and in fact moving, and the same goes for fire, and for the aether of the heavenly bodies. So, where are immobile places to be found?[17]

Aristotle adds to the difficulty by providing a rather obscure example: a boat in a river (presumably what he has in mind is a boat flowing along with the river). He claims that in such a case the boat is in the flowing water as in a vessel (with respect to which it does not move), whereas its immobile place is "the whole river" (with respect to which it does move):

> Just as a vessel is a mobile place, so place is an immobile vessel. That is why, when something is in motion inside a moving object (imagine a boat on a river), it uses its surroundings as a vessel rather than as a place. But place is meant to be immobile. For that reason the whole river is rather the place (ὁ πᾶς μᾶλλον ποταμὸς τόπος), because taken as a whole it is immobile (ἀκίνητος ὁ πᾶς) (Arist. *Phys.* 4, 212a14–20).

This passage was much debated by ancient and medieval commentators and various solutions were devised.[18] Some commentators took the claim about "the whole river" being the place to refer to the immobile river *banks* (as opposed

17 This is why Simplicius *Ph.* 604, 3 asks: "Where then is place, i.e. which things are properly in place?".

18 For an overview of the problems and solutions, see Grant 1981; Sorabji 1988, 190; Algra 1995, 222–230.

to the mobile, flowing water). But that would be to violate one of the criteria for place which Aristotle had set up himself, viz. that it should be contiguous (*prōton peras*) and of the same size ("neither larger nor smaller", 211a2). In order to save both the contiguity and the immobility of Aristotelian place (*qua* surface of the surrounding body) some later medieval commentators introduced a distinction between material place (the actual surface of the immediately surrounding body, which may be mobile) and formal place (the surrounding surface, considered *in abstracto*, and with its immobility defined in terms of its location in relation to the outer sphere of the heavens).

Ben Morison presents what at first sight may seem to be a variant of this theory.[19] His interpretation of Aristotle's definition resembles the medieval conception of formal place in that it rescues the immobility of the surrounding surface by *specifying* it in a particular way. The difference is that whereas the medieval commentators specified the relevant surface as the surface of the immediately containing substance, but taken *in abstracto*, Morison specifies it as the containing surface *taken as the surface of a larger surrounding entity*, or of a group of entities, and in the end even as the surface of the surrounding cosmos as a whole. Thus, in the example of the boat being moored in, or moving through, a flowing river, the boat's (immobile) place, i.e. the surrounding surface, should not be specified as the surface of the surrounding (flowing) water, but as the surface of the (immobile) river as a whole, and in the end even as the inner surface of the whole universe surrounding the boat. And the universe as a whole is immobile – as Morison points out – not in the sense that it is naturally designed for motion but will in fact not move, but in the sense that, although nothing prevents it from moving, it is impossible for it to move, because there is nothing outside it.[20] This, in the end, is what guarantees the required immobility of the surrounding surface. So the problem of the immobility of place disappears: we can always specify the surrounding surface as the surface of the immobile surrounding cosmos as a whole.

This is an ingenious solution, which at first sight seems to have in its favour that it makes use of the familiar Aristotelian practice of specification by means of *qua*-locutions. But there is a drawback: we do not easily derive it from what Aristotle actually says. He does not use the relevant *qua* locutions in this context. He does not speak of the surface of the surrounding river *qua* surface of the surrounding universe. Instead, he simply uses the crude formula "the whole river is rather the place". At this point Morison, appears to support his interpretation by

19 He discusses the issue of immobility in Morison 2002, 155–161.
20 Morison 2002, 157.

offering a different translation of the words ὁ πᾶς μᾶλλον ποταμὸς τόπος. He takes them to mean: "rather the whole river is *a* place", i.e. *one* of the possible ways of identifying the surrounding surface, next, for example to the identification of this surface as the limit of the surrounding universe.[21] On this reading, in other words, the eventual identification of the surrounding surface as the surface *of the surrounding immobile universe* is thus at least *implied*.

Apart from the fact that this does not appear to be the most natural way to interpret the Greek of this particular passage,[22] the role here accorded to the immobility of the cosmos as a whole seems questionable for other reasons as well. First of all, it is true that Aristotle does speak of the universe as a *koinos topos*, so in a sense each thing can be said to be 'in the universe' as in a place. But in so far as I can see, he does not anywhere connect this device to the issue of the immobility of a thing's proper place (*idios topos*).[23] Secondly, it may well be asked whether the immobility of the cosmos as a whole is the kind of immobility we are looking for. We are discussing *intra-cosmic* motion and rest, so we need an immobile reference point *within the cosmos* which allows us to determine whether a particular body is moving or at rest. This is what Aristotle makes clear in the passage immediately following on the river example and the statement of the immobility requirement.[24] For there he goes on to talk about the centre of the world and the inner limit of the sphere of the heavens as 'above' and 'below' in the basic, or 'absolute' sense, because they are both at rest. It is with respect to these two items that we can determine the natural rest or natural motion of the elements. As we will see, Eudemus explicitly works out this line of thought by specifying that we define immobile places with reference to the heavenly sphere which is immobile in the relevant, intra-cosmic, sense. For all we know, he did not speak of the immobility of the cosmos as a whole.

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21 Morison 2002, 159 admits that "Aristotle's account favours specifying some smaller (and possibly ephemeral) locator as the host of the place of *x*", because smaller locators (a) "show how the universe changes around *x*", and (b) "are evidently more in line with our practice of saying where things are (we advert, normally, to intermediate items in something's surroundings – although this depends greatly on context, of course". I agree on (b), but I think (a) is not really an issue in Aristotle's presentation of things.

22 The fact that the noun τόπος here occurs without the article is perfectly normal Greek idiom, for nouns in a predicate position. It does not indicate that Aristotle is talking about 'a place' rather than 'the place'. Indeed the equivalent of 'a place' would probably have been something like τοπός τις. The context seems to suggest that we are being told that it is not the immediately surrounding water, but the river as a whole that is said to be *the* place of the boat.

23 For the distinction between *koinos* and *idios topos*, see the beginning of the second chapter of *Phys.* 4, 209a31–b4.

24 The passage is quoted below in the text, p. 27.

And indeed we may well ask how relevant the immobility of the cosmos as a whole would be in this connection. Imagine a situation where the cosmos is surrounded by an infinite empty space and where – as imagined by the Stoic Cleomedes and in medieval thought experiments – it moves or is moved so that it exhibits a rectilinear translation through this space.[25] Would that change the way in which we define mobile versus immobile substances *within* the cosmos? Wouldn't we still regard the centre and the periphery as fixed reference points for determining *intra-cosmic* motion and rest? Conversely, of what use would the immobility of the cosmos as a whole be, for the purpose of locating things within the cosmos, if we imagine the cosmos as containing *no* fixed elements, but consisting of substances which all move helter-skelter all the time? It appears, in other words, that the search for immobile places would in principle not be thwarted by any supposed motion of the cosmos as a whole, whereas it would indeed be thwarted if we had no immobile reference points *within* the cosmos. So perhaps we should not look as far as the immobility of the universe to secure the required immobility of places.

On the basis of these considerations, I do not think it very likely that Aristotle's claim that "the whole river is rather the place" refers to the surrounding surface of the boat-sized hole in the cosmos. One would rather expect it to refer to the surface of the surrounding river, taken *in abstracto*, i.e. as a geographic entity, following the interpretation of the earlier mentioned medieval commentators (an interpretation which has been taken up some time ago in a slightly different way by Myles Burnyeat).[26] This surface, we may surmise, derives its immobility from the immobility of the river *qua* geographical entity, which has a fixed position on the immobile earth, which in its turn has a fixed position with respect to the heavenly spheres. Nevertheless, even this solution remains problematic in that (a) the roughshod phrase "the whole river is the place" needs translation and unpacking and (b) the solution still presupposes a distinction between the surface *qua* surface of the surrounding water and the surface *qua* the surface of the surrounding immobile river as a geographical entity – a distinction which is not provided in the context of these particular passages, nor indeed elsewhere in *Phys.* 4. Consequently, we need not be surprised, *pace* Mor-

25 Cleom. *Cael.* 1, 1, 39 – 43 Todd. More or less the same thought experiment was referred to in the 49th proposition of the condemnation of 1277 (which argued against those (Aristotelians) who claimed that God could *not* shift the world) and it was taken up by philosophers such as Thomas Bradwardine, John de Ripa and Nicolas Oresme. See Grant 1979, 230 – 232. In these contexts, the thought experiment was actually used to prove that there is, or can be, an extra-cosmic void space.

26 See Burnyeat 1984, 230 n.15.

ison, that the problem of the immobility of place remained on the agenda in the later ancient and medieval commentary traditions, starting, as I believe, with Theophrastus.[27]

(iv) The location of the heavens. The text of the first part of chapter 5 of *Phys.* 4, which deals with the subject of the emplacement of the (outer sphere of the) heavens (212b8 – 21) is extremely condensed and difficult. Aristotle appears to claim that the *ouranos* is not in a place as a whole, but that it has places for its parts in so far as they move and contain each other (hence, they somehow act as each other's places). The fact alone that Aristotle designates his subject as "the *ouranos*" does not make matters easier. After all, in Aristotle, even in this single context, the word *ouranos* can refer either to (1) the whole cosmos (as a synonym of 'the universe' or *to pan*), or to (2) the outer sphere of the heavens, or to (3) the heavens as a whole. Interpretations of what Aristotle is saying (and especially of what he means by "the parts" of the *ouranos*) naturally differ according as one opts for (1), (2) or (3). The translation of Waterfield and Bostock (1996), for example, opts for (1) and takes the whole of 212a31-b22 to be about the (place of the) universe. Hussey (1983) 119 rather assumes that Aristotle is moving between the various senses of *ouranos*, as indeed does Philoponus in the various sections of his commentary.[28] Simplicius (*Ph.* 594, 35 – 37) actually complains that "it is clear that he was calling either the whole universe or the whole of that which revolves 'the heavens', but he created much unclarity in the passage before us by saying sometimes 'the heavens' and sometimes 'the universe'".

But perhaps we should leave the problem of the lack of clarity in the presentation for what it is and move on to the underlying conceptual problems. Whether *ouranos* refers to the outer sphere, or to the heavens as a whole, or to the cosmos as a whole, the cosmos is said not to be in a place. Is there a problem here at all? One *might* say that these three entities all do indeed lack a container, so that from an Aristotelian point of view it is hardly a problem that they are not in a place. If only those things are in a place which have surroundings, then these three objects do not need to be emplaced. However, this would be to ignore two further problems. One is that it is surely counter-intuitive that a particular part or parts of the cosmos are not in a place. This is not an anachronistic or un-Aristotelian worry, for Aristotle himself appears to have subscribed to the first premise of Zeno's paradox, viz. that all things that exist are, if not in a place, then at least 'somewhere' or 'in something' (see also 208a39: "the idea

27 But see below, p. 32, on Ben Morison's different interpretation of Theophrastus' position.
28 See Algra / Van Ophuijsen 2012, 118 nn. 201 – 203.

that existing things are somewhere is universally accepted"). So why not the heavens? We do have a problem here, it seems. Another problem is that the havens do in fact exhibit a form of locomotion, for the spheres rotate. How can we have a form of locomotion without change of place? Aristotle's solution in the obscure first part of ch. 5 seems to come down to the claim that

(a) *ouranos*, in whatever meaning of the word he has in mind here, is indeed in place, but only in virtue of its parts; and that

(b) the kind of locomotion involved is rotation and that this means that its parts exchange places without the *ouranos* as a whole doing so.

So we have a location for the *ouranos*, not as a whole but in virtue of its parts; and we have a form of locomotion, in the proper sense of changing places, not for the *ouranos* as a whole, but for its parts. How are we to interpret this?

The commentary tradition comes up with two ways in which this could be worked out, each of them equally unsatisfactory. One option is to take this passage to be about the heavens as a whole, in which case the reference to "the parts" and their respective motions is taken to be to the nested spheres. The problem with this is that it does not leave us with a place which can serve as the measure of rotation; for during its rotation each inner sphere remains in the same outer sphere. Secondly we are left with the outermost sphere, which on this interpretation should still be taken not to be in a place at all, for it has nothing to surround it from outside, unless we take it to be located, exceptionally, not in a concave *surrounding* surface, but in the convex surface of the *inner* sphere of Saturn, as some commentators appear to have suggested.[29] Another option is to take the whole passage to be about the *outer sphere* alone, and to take the reference to the parts to be to the continuous parts of this outer sphere itself. The problem with his interpretation is that on Aristotle's own line of thought, and as we noted above in subsection (i), the parts of a continuous whole are not in a place properly speaking. Moreover, in the process of the rotation of the outer sphere these parts do not in fact change place relatively to each other, so they can hardly constitute the places that measure the rotation of the sphere.

A possible way out for an Aristotelian would be to claim that locomotion is restricted to the kind of rectilinear motion that we witness in the sublunary world, and that only substances in that region are the sort of things that need places to explain their motions. In that case the fact that the outer sphere and the heavens as a whole are not in place, although they rotate, could be seen

29 Cf. Them. *Phys.* 121, 1–5.

as no longer problematic because rotation would no longer be treated as a subspecies of locomotion, but as a separate species of change (next to locomotion, qualitative change etc.) in its own right, one which does not require a place to start from, nor a place to move into. This appears to have been the option chosen by Alexander of Aphrodisias.[30] However, as Simplicius notes in the first part of his *Corollary*, there are passages where Aristotle emphatically does claim that rotation is in fact one of the subspecies of locomotion or *kinēsis kata topon*.[31] So at the very least one does get the impression that Aristotle had not thought this through sufficiently.

In his *Corollary on Place* Philoponus has this to say on the subject:

> Hence, when they try to explain how the sphere of fixed stars could move in place when it is not in place, they throw everything into confusion rather than saying anything clear and persuasive. For they cannot deny that the sphere moves in place, because they cannot even make up a story about what {other} kind of motion it would have. However, they cannot explain what is the place in respect of which it moves, but like people playing dice they throw out first one account, then another, and through them all they destroy their original assumptions and agreements. For by concealing the weakness of his account with obscurity, Aristotle licensed those who want to change their stories however they wish (Phlp. *Ph.* 565, 12–21).

But we need not resort to the critical Philoponus. Even Ben Morison has to conclude that it is "a problem which is recognized and tackled by Aristotle, but unsatisfactorily".[32]

3 Eudemus of Rhodes

Simplicius starts his *Corollary on Place*, which is appended to his discussion of *Phys.* 4, 1–5, by remarking that Aristotle's account "contains many difficulties and offered many lines of examination to those who came after him". In the next few sections (3, 4, 5) I want to examine to what extent this judgement applies to the first two generations of Aristotelian philosophers: Eudemus of Rhodes, Theophrastus of Eresus and Strato of Lampsacus. I will not provide an exhaustive discussion of the evidence on these philosophers, nor will I discuss everything they thought and wrote about place, space and void. but I will

30 Cf. Simp. *Ph.* 595, 20–21; cf. also 589, 5–8; 602, 31–35.
31 *Ibid.*, 603, 4–16.
32 Morison 2010, 85.

focus instead on those fragments that can be linked to any of the four problems that were discussed in the previous section. Let us start with Eudemus.

Eudemus of Rhodes returned to his home island in 323, when after the death of Alexander the Great, Aristotle had to leave Athens and Theophrastus became scholarch. In Rhodes he started a small-scale philosophical school of his own. Gottschalk describes him as a "worthy professor, battling to instil the rudiments of Aristotelian philosophy into an undistinguished group of students".[33] His *Physics* appears to have been based on a course of lectures covering the same subjects as Aristotle's *Physics* and in the same order, except that it contained nothing corresponding to what we now know as book 7.[34] It has been argued, accordingly, that his selection of material from Aristotle anticipated the selection later supposedly made by Andronicus of Rhodes.[35] He seems to have been virtually unknown in the Hellenistic era, but some of his works, among which the *Physics* circulated during the renaissance of Aristotelianism in the first two centuries AD. Eudemus was much quoted by Alexander of Aphrodisias and through him his ideas reached the later commentators, although also Simplicius appears to have read his *Physics* for himself (in fr. 44 Wehrli he claims that he is unable to find a quotation provided by Alexander in Eudemus' own text). I think the work can be characterized as a shortened paraphrase (it seems to have comprised four or five books) with some additions and clarifications, perhaps comparable to what we later find in Themistius (whose work was also freely used by later commentators).

What remains of Eudemus' discussion of place in his *Physics* is in a sense a mixed bag. Some fragments are merely a paraphrasing explanation of what is in Aristotle, comparable to what we find in the later exegetical paraphrase by Themistius. Other fragments try to clarify and articulate Aristotle's account at various points, and in doing so they may go beyond what is in Aristotle and introduce slight modifications. An example of such a slight modification can be found in a passage in which Simplicius tells us that both Theophrastus and Eudemus took the immobility of place to be among the initial *axiōmata* of the theory.[36] Aristotle, we may recall, did not include the immobility requirement in his *axiōmata*, i.e. in his revised list of basic *phainomena* at the beginning of chapter 4, but added it only later on, at the end of the chapter (212a14–21). The modification proposed by Theophrastus and Eudemus does not affect the

33 Gottschalk 2002, 36.
34 *Ibid.*, 29–30.
35 *Ibid.*, 33.
36 Cf. Simp. *Ph.* 606, 32–35 (Eudemus frs. 79a-c Wehrli; Thphr. fr. 147 FHSG).

core of Aristotle's theory, but straightens out his argument and makes for a clearer presentation.[37]

The immobility of place recurs as a theme in another fragment which may be taken to offer an example of a further articulation of what is in Aristotle. On closer view, the problem of immobility involves two sub-questions: (a) with respect to what should we specify the immobility of place, and (b) can we find places as surrounding surfaces that are indeed immobile in the required sense? Eudemus focuses on the first question. He answers it by saying that we determine immobile places in relation to the heavens:

> Having said that place must be the limit, in so far as it surrounds, of the surrounding body which was immobile, he [*scil.* Eudemus] added: "For that which moves is like a vessel, and that is why we determine places in relation to the heavens. For they do not change place, except in their parts" (Simp. *Ph.* 595, 5–8; part of Eudemus fr. 80 Wehrli).

In doing so he may well have taken his exegetical cue from the passage in Aristotle which immediately follows on the final definition of place as the "first immobile limit of what contains". For Aristotle goes on to claim that this definition takes account of a number of basic phenomena, starting out by saying that

> We can now see the reason why the centre of the world and the inner limit of the heavenly revolution are taken to give us 'above' and 'below' in the most basic sense. It is because of their constancy: the centre is absolutely stable and the limit of the rotation always stays in the same state (Arist. *Phys.* 4, 212a21–24).

As Hussey remarks in his commentary, "the present section shows that there are natural places, kept immobile by the permanent structure of the world".[38] If I am correct, Eudemus used this brief reference in Aristotle to immobile natural places to specify the immobility of *all* places in terms of their relations to the heavens as a fixed point of reference. This means that he answered our sub-question (a), thus adding in a welcome clarification of Aristotle's conception of immobile places, and showing that immobility is not defined in terms of the immobile universe, but in terms of the immobile heavenly sphere.[39] The evidence does not tell us whether he also wrote about our sub-question (b).

37 Sharples 2002, 117.

38 Hussey 1983, 118.

39 *Pace* Morison; see the previous section.

More interesting, perhaps, for our purpose is a fragment which adds another reason for the difficulty of the subject (i.e. to the reasons already outlined by Aristotle in 212a7–14, a passage quoted above, p. 11):

> Eudemus says that a further cause of the difficulty of the problem of place is that [the notion of] place is not easy to grasp, because it altogether escapes us when the body in it is removed, and it is not possible to apprehend it in itself, but, if at all, in combination with something else, like the sounds of the so-called consonants. For with 'a' added, the sound of 'b' and 'c' becomes clear (Simp. *Ph.* 523, 22–28; Eudemus fr. 73 Wehrli).

Here, I believe, Eudemus wittingly or unwittingly puts his finger on what is primarily an additional weakness of *Aristotle*'s theory, rather than of *any* theory of place. After all, in the very passage on which Eudemus is here commenting Aristotle claims that one of the difficulties surrounding our theorizing about place is that we may take the container which remains at rest to be place-as-extension, because it seems "possible that there is an extension between the limits which is not the same as the magnitude of the moving bodies" (212a7–30, quoted above, p. 11). In other words, the rival conception *does* allow us to think of place as something existing in its own right. For Aristotle's own conception, however, this is different. As we saw in the previous section, this conception usually does not allow us to specify a place that an object has left behind or to specify the place where an object is going to end up before it has moved over. That this objection was still 'around' later in the Hellenistic period can be inferred from the critique of the Peripatetic theory of place in Sextus Empiricus *PH* 3, 131, which no doubt has earlier collections of sceptical arguments as its proximate source,[40] but which may ultimately be traced back to doubts raised within the Peripatetic tradition of the kind here presented by Eudemus:

> But if this is what place is, then the same thing will both exist and not exist. When a body is about to come into being at a certain place, then in so far as nothing can come into being in what does not exist, the place must pre-exist in order that in this way the body may come into being in it. And for this reason the place will exist before the body which is in the place comes into being in it. But in so far as a place is effected when the surface of what includes encloses what is included, a place cannot subsist before the body comes to be in it; and for that reason it will not then exist (S.E. *PH* 3, 131).

It appears, then, that surrounding surfaces are not just items that can only with much difficulty, if at all, be given the required immobility, they are also items

40 Note that the arguments in the parallel account in *M* 10, 20 are said to come "from the sceptical tradition" (ἀπὸ τῆς σκέψεως).

that are hardly stable enough to serve the purpose places should serve, viz. being a container that can be filled and then left behind. As I have argued in the previous section, this is not a worry that stems from considerations that are external to Aristotle's own theory, but rather one that follows from his own requirement that place should be "left behind by each object and be separable" (211a2–3), a requirement that is more easily satisfied by the rival conception of place as a three-dimensional extension. Of course it is also satisfied by vessels. But not by non-permanent Aristotelian places. Here we may be hitting upon a central problem. One might say that Aristotle's attempt to locate bodies primarily in terms of their surroundings is in principle a reasonable one – working out, as we saw, common sense ways of thinking and speaking, like 'a fish is swimming *in* the water' or 'I am *in* Athens'. But the problem seems to be his reification of place as a surrounding *something*. Perhaps, in other words, the comparison with the vessel was not such a good idea after all.

4 Theophrastus of Eresus: frs. 146 and 149 FHSG revisited

This brings us to Theophrastus. His *Physics* appears to have differed from its Eudemean counterpart in several ways. For one thing, there appears to have been no systematic correspondence between the order of its books and the books of Aristotle's *Physics*.[41] For another, Theophrastus' text appears to have had rather different aims: where Eudemus basically provided an exegetical paraphrase, probably for scholastic use, Theophrastus appears to have felt free to raise puzzles, to improve Aristotle's theory on some points, and to disagree with him on others.[42] Nevertheless, we have no reason to see his work otherwise than as aiming to continue Aristotle's project, while following Aristotle in broad outlines.

The two most relevant fragments dealing with place are both to be found in Simplicius *Corollary on Place*. The first (fr. 146 FHSG) lists a set of five *aporiai* that concern Aristotle's account. Although, as we shall see, these *aporiai* can be seen as objections that are to be taken seriously, we are not told whether Theophrastus thought them decisive. The second fragment (fr. 149 FHSG) offers what looks like a cautious suggestion, but it is not immediately clear what this suggestion amounts to and to what extent it constitutes an alternative to Aristotle's account. Some earlier scholars, such as Jammer and Sambursky, claimed that together

41 Sharples 1998, 2–3.

42 For a general characterization of Theophrastus as a philosopher, see Sharples 1998.

these fragments show that Theophrastus actually rejected Aristotle's concept of place and replaced it with a concept of place as a relation, more or less resembling the concept that would be defended by Leibniz later on.[43] Sorabji provided an alternative interpretation of these fragments as indicating that Theophrastus rejected Aristotle's theory of *natural* places.[44] I myself have argued elsewhere that the two fragments under discussion here appear to fit in with the overall picture of Theophrastus which I have just sketched: that his critical attitude merely shows itself in his leaving the *aporiai* of our first fragment unanswered, without the implication that Aristotle's theory should therefore be rejected; and that the second fragment presents us with hardly more than the *suggestion* that perhaps we should not regard place as something that is really there (i. e. the surface of a surrounding body), but rather as a concept we use to denote the order and position of things.[45] It is likely, in my view, that it is precisely in virtue of this cautious way of presenting this suggestion that, contrary to what has been suggested by Sorabji,[46] Theophrastus' ideas about place did not become widely known. Outside the context of these few passages in Simplicius, we find no references to them.

Recently Ben Morison has come up with an even more watered-down interpretation of these two fragments. In his view the *aporiai* in the first fragment (fr. 146) should not be read as serious *objections* at all, but as harmless puzzles or "clarificatory devices".[47] In his view all of them "can be given Aristotelian answers",[48] although he admits that in most cases no straightforward answers are forthcoming either from Aristotle's own texts or from what remains of Theophrastus' *Physics*. He then goes on to interpret our second fragment (fr. 149) as in fact supporting or actually restating Aristotle's theory. So Aristotle's theory of place – which, we may recall, Morison sees as basically unobjectionable – comes out shining and unscathed: Theophrastus signals no serious problems and offers no alternative view, cautious or otherwise.

Given these divergent assessments, and especially against the background of Morison's challenging new interpretation, a fresh look may be appropriate. First the *aporiai* of fr. 146 FHSG. The text, as noted, comes from Simplicius' *Corollary on Place*. In the first few pages of this *Corollary* Simplicius lists a number of ob-

43 For references, see Algra 1995, 232 n. 96.

44 According to Sorabji 1988, 201 this attack was very influential and enabled later Greeks to take a more Newtonian view of space than their medieval successors.

45 See Algra 1992 and 1995, 231–248.

46 See above, n. 44.

47 Morison 2010, 89.

48 *Ibid.*, 89.

jections against Aristotle's conception of place. After having asked "where then is place, i.e. which things are properly in place? For both air and water are in motion, while individual bodies in general are in flux in the air or water", he goes on as follows:

> One should know that in his *Physics* Theophrastus too raises difficulties (ἀπορεῖ) of the following sort against Aristotle's account of place:
> (1) a body will be in a surface;
> (2) place will be in motion;
> (3) not every body will be in a place; for the sphere of the fixed stars will not;
> (4) if the spheres are taken together, the heaven as a whole will also not be in a place;
> (5) things in a place will no longer be in a place if, without their changing themselves at all (μηδὲν αὐτὰ μετακινηθέντα), their surroundings are removed (Simp. *Ph.* 604, 5–11; Theophrastus. fr. 146 FHSG).

Let us first review the five *aporiai* once again, with a view to their potential strength.

Aporia 1 (a body will be in a surface): the most natural way to take this *aporia* is as an application of Aristotle's own requirement that places should be equal (i.e. "neither larger nor smaller", *Phys.* 4, 211a2) to the emplaced body. For how can a surface be equal in size to a body? Morison thinks the problem can be easily solved: "the size of the surface should be calculated in this instance as being not its area, but the volume it encloses".[49] And his everyday example of my coat being 'my size' meaning that it encloses me snugly has a certain *prima facie* appeal. One may still wonder, however, whether this does not involve a certain amount of cheating with the notion of 'size'. Moreover, one might object that taking the size of the place in the sense of the volume that is being enclosed, and then saying that *this* is equal to the size of the emplaced body, amounts to surreptitiously introducing the notion of place as a three-dimensional extension. For if the size of the place is the volume that is being enclosed, and place is different from what is emplaced, then one might well conclude that place is an enclosed volume independent of the enclosed body, and in that sense equal in size to it.

One may doubt, in other words, whether this Aristotelian answer really works. It should be granted, however, that this *aporia* may not be the most damaging one. Perhaps the best way to solve it would be to say that the original requirement that place should be neither larger nor smaller should be reformulated in more neutral and less obviously quantitative terms, e.g. by claiming that place should be 'exactly fitting' – for this would accommodate both the concept

49 Morison 2010, 83.

of place as an extension (being exactly covered by what is emplaced) and the concept of place as a surrounding surface (exactly surrounding the emplaced).

Aporia 2 (place will be moving): here as elsewhere the future tense (*estai)* indicates that we are dealing with a supposed *consequence* of Aristotle's conception of place. It is an *undesirable* consequence, we may suppose, because both according to Aristotle and according to Theophrastus himself (as we can infer from some other fragments) place *should* be immobile.[50] But why would this be a consequence of Aristotle's account or theory? I have argued earlier that this is because Aristotle defines place as a surrounding surface, and surrounding surfaces are the surfaces *of mobile substances*.[51] So strictly speaking – i.e. without invoking the "surfaces taken *in abstracto*" of the later medieval commentators (on which see section 2 above, p. 20) – there *are* no immobile surrounding surfaces. Theophrastus would thus be the first to have signalled the problem of the immobility of place as a problem which specifically arises for the Aristotelian theory, in which, as we saw, he would be followed by many others.

Now we saw that Ben Morison claimed that Aristotle actually solved the problem of immobility by taking place to be the surface of the whole surrounding cosmos, for this cosmos is immobile in the relevant sense. So how, on his view, can Theophrastus present moving places as a *consequence* of Aristotle's conception of place? The answer is that Morison prefers to connect this *aporia* with a fragment (to which I briefly referred in the previous section on Eudemus) which suggests that both Eudemus and Theophrastus claimed that the immobility requirement should not have been added *to the definition*, as it is in Aristotle (at the end of chapter 4), but *to the axiōmata* of the theory (as given at the beginning of chapter 4).[52] The solution to the *aporia* is then supposed to be easy: add the requirement to the *axiomata*, as proposed by Theophrastus himself, and all is fine. But this is odd. The point made by Theophrastus and Eudemus about relegating the required immobility of place to the *axiōmata* appears to be one of presentation only. Why would Theophrastus claim that adding the requirement of immobility to the definition rather than to the starting points would have the effect that place – presumably: any place – will as a matter of fact be moving? On balance, I do not think this interpretation offers a convincing way to read, and then defuse, the second *aporia*.

Aporiai 3 and 4 (outer sphere and heavens as a whole are not in a place): I have already discussed this problem as one of the 'classic' problems associated

50 For Theophrastus' view on the immobility of place cf. further frs. 147 and 148 FHSG.

51 See section 2 of this paper; see also Algra 1995, 222–230, and 235.

52 Simp. *Ph.* 606, 32–35 (Theophrastus fr. 147 FHSG).

with Aristotle's theory in the later tradition. Morison, as we saw, recognizes that "Theophrastus has put his finger on a problem which needs spelling out explicitly – a problem which is recognized and tackled by Aristotle himself, but unsatisfactorily".[53] He also claims that "nothing indicates that Theophrastus meant this to be a devastating objection",[54] to which I agree, and adds that all *aporiai*, including this one, *can* in the end be given an Aristotelian solution, which is something I find it harder to go along with, for no satisfactory solution emerges from the tradition.

Aporia 5 (take away the surroundings, and a thing is no longer in a place, without it changing or moving itself in any way): I agree with Morison against Sorabji that this *aporia* is not about a situation where a thing's surroundings are *in motion*, but rather about the situation where a thing's surroundings are removed altogether. According to Morison this is "an unexpected consequence of Aristotle's theory, but not a weakness".[55] For he locates the paradoxical aspect in the fact that such a body appears both to have moved (for it is no longer in its former place) and not to have moved (for it has not exhibited any motion itself). And then, he argues, the solution is easy: you should not say '*x* has moved from place *p* if *x* is no longer in place *p*', but rather '*x* has moved from place *p* if *x* is no longer in place *p* but in place *q*'.

Against this we should first note that the words μηδὲν αὐτὰ μετακινηθέντα could equally well be translated as "having changed in no way" rather than "not having been moved themselves", so that the issue would not be about things paradoxically having moved and not having moved at the same time, but rather about their suddenly finding themselves without a location, without having themselves changed in any way. But even if we adopt Morison's translation, we should acknowledge that the way in which the *aporia* is phrased shows that the focus is not on the paradox identified by Morison (i.e. it is not primarily about moving and not moving), but that the unexpected consequence is rather (once again voiced in the future tense) that "these things will no longer be in a place" (οὐκέτι ἔσται ἐν τόπῳ). And this is arguably not just an unexpected consequence, but also a weird one. We are dealing with a thought experiment about emplaced things, i.e. substances within the cosmos. If we take away their immediate surroundings and (counterfactually) create a void around them, these substances suddenly find themselves without a location. Yet, we know that all cosmic substances are supposed to have a location and indeed we can still indicate

53 Morison 2010, 85.
54 *Ibid*., 85.
55 *Ibid*., 86.

where these substances are with respect to the remaining elements of the cosmos, even if their direct surroundings are no longer there. I am not saying that Theophrastus thought this to be "evidence that Aristotle's account of place is doomed".[56] After all there is no evidence, as we saw, that he rejected the theory in the end. But examples such as this *could* very well have led him to the cautious suggestion (presented in the second fragment) that perhaps place is not a surrounding *thing*, but rather a term we use to indicate a thing's relation to its surroundings. For that would be a way to circumvent this fifth *aporia*.

But this would be to jump to conclusions concerning the meaning of our second fragment. Let me first take stock of this discussion of the five *aporiai*. I grant Ben Morison that the first one is perhaps rather innocuous, although some work is needed to get it out of the way, and although later commentators did in fact repeat it (see e.g. Phlp. *Ph*. 563, 31–564,3). But the solutions Morison offers for *aporiai* 2 and 5 do not appear to address the problems that are at stake, and he does not even offer a solution for numbers 3 and 4, but merely suggest that a proper Aristotelian solution *can* be found even though, as we have seen, no satisfactory solution appears to have been offered within the Aristotelian tradition. All in all, then, I think we are entitled to conclude that even if (as I agree) Theophrastus somehow did not think of these *aporiai* as *fatal* to Aristotle's theory, he did signal them as problematic aspects of that theory.

Let us now move on to our second fragment:

> Also Theophrastus seems to have subscribed to this view in his *Physics*, in a passage where he continues his account in an aporetic fashion (Morison: as one who in an impasse tries to advance the argument) and says: "Perhaps place (*topos*) is not a substance (*ousia tis*) in its own right (*kath' heauton*), but we speak of it because bodies have an order (*taxis*) and position (*thesis*) in conformity with their natures and powers, and similarly also in the case of animals and plants and in general of things with a differentiated structure, whether animate or inanimate, if they have a nature that exhibits form. For in these too there is an order and position of parts in relation to the whole substance. And this is why each of them is said to be in its own place through having its own proper order. For each part of the body too would desire and demand its own place and position" (Simp. *Ph*. 639, 13–22; Theophrastus fr. 149 FHSG).

On my own earlier reading of this fragment, it offers, as a cautious suggestion, an alternative way of conceiving place.[57] Ben Morison, by contrast, argues that the fragment contains nothing that could not be endorsed by Aristotle too, and that

56 *Ibid.*

57 Algra 1992, 146–157, and 1995, 237–242.

it thus testifies to Theophrastus' complete orthodoxy in so far as the theory of place is concerned.[58] In order to take things further, I think three questions in particular need to be answered:

(1) How does this passage fit into the overall structure of Simplicius' overview in the *Corollary on Place?* More particularly, what do the words "this view" in the first line refer to?
(2) What are the implications of Simplicius' claim that Theophrastus "continues his account in an aporetic fashion" – or, if we prefer Morison's translation, which seems equally possible: "as one who in an impasse tries to advance the argument"?
(3) What is the nature of the view set out by Theophrastus in the actual quotation?

As for question (1), it is clear from the larger context that Simplicius sees Theophrastus as anticipating some aspects of the theory of place of his teacher Damascius. But only *some* aspects, since Damascius' theory is presented as "novel".[59] So which aspects does he have in mind? I think he makes this quite clear in the *diaeresis* of conceptions of place which he offers at *Ph.* 641, 23ff., at the end of his *Corollary.* This *diaeresis* is based on the various ways in which different theories of place can be seen to work out what Simplicius describes as the *koinē ennoia*, or common conception, of place:

> But now it should be added to the above that there is a common conception of the whole of place which says that it is the determination of the position of each distinct thing among entities. This determination is either made in terms of (i) the receptacle (κατὰ τὴν ὑποδοχήν) or (ii) the container/what surrounds (κατὰ τὴν περιοχήν), or (iii) the ordering of the position of each distinct thing among entities (κατὰ τὴν ἑκάστου πρὸς τὰ ἄλλα τάξιν τῆς θέσεως) (Simp. *Ph.* 641, 23–27).

He then goes on to assign Aristotle's conception of place as a subspecies to type (ii) (642, 11–13), whereas he assigns Damascius' view to type (iii):

> This, I said, was the view of Damascius, the head of our school, and it was vouched for by Theophrastus and Iamblichus (Simp. *Ph.* 642, 17–19).

This final *diaeresis* of conceptions of place thus offers a classification according to what me might call the *morphology* of place: other aspects (such as the dy-

58 Morison 2010, 98.

59 On Damascius' theory and on the connection Theophrastus-Iamblichus-Damascius as seen by Simplicius, see Algra 1992, 157–162.

namic or non-dynamic character of place) are left unconsidered, which is why we can find Theophrastus lumped together with two in other respects very different Neoplatonic theories (those of Iamblichus and Damascius). This classification shows that Simplicius reads Theophrastus' suggestion as at least an anticipation of the view of place primarily in terms of *taxis* and *thesis*, rather than as an elaboration of the Aristotelian view of place as a containing *something*. Of course we cannot exclude that he is mistaken, but he almost certainly had direct access to the text of Theophrastus' *Physics*,[60] and should accordingly be considered capable of seeing this quotation against the background of its larger Theophrastean context. We have no *prima facie* reason to distrust his evidence.

As for question (2), Morison rightly, in my view, explains that "being in an *aporia*" here means that you are considering a question, and that you have considered and rejected all the answers which strike you as possible, but end up having nowhere to go. "Advancing the argument" then means: bringing in a new set of possible answers. So we have a conception X of place as an *ousia* which somehow leads to puzzlement, and then we are given an alternative Y. But, in this case, what is X and what is Y? On the view I defended earlier, Theophrastus, having considered a number of puzzles surrounding Aristotle's conception of place as in some relevant sense a *thing*, ventures to suggest the alternative view that place is a concept which has no clear denotation, but is used to indicate a body's relation (*taxis* and *thesis*) to its surroundings. So, on this interpretation, X is the Aristotelian view and Y is an alternative conception. Yet it is an alternative which, in so far as it still defines place in terms of surroundings, might be thought to be acceptable to an Aristotelian as well. Hence the presentation of Y as a cautious, but apparently not immediately implausible, suggestion.

Morison, by contrast, argues that it is Y that actually presents us with Aristotle's considered view, and that X, the conception that induced the *aporia*, must be a non-Aristotelian conception of place, for example the view which takes place to be an independently existing extension.[61] But if this is the nature of the contrast between X and Y – a clearly non-Aristotelian view being replaced by the Aristotelian view – one wonders where the puzzlement on X comes from (the conception of place as an independent extension, for example, had been rejected by Aristotle in no uncertain terms, even if we may regard his arguments as inconclusive) and why Y is being introduced so tentatively with the words "perhaps place is not an *ousia*, but etc.". Doesn't this rather suggest

60 He quotes a passage from "the beginning of his *Physics*" at *Ph.* 9, 5–10 (fr. 144b FHSG).
61 Morison 2010, 93.

that X and Y are not radically opposed alternatives, but rather two views which might both seem to fit within the overall framework of Aristotelian physics?

This brings me to (3). It might be argued that conception X, which Theophrastus here presents as the problematic one, *cannot* be the Aristotelian one, for Aristotle does not in fact hold that place is a substance (*ousia*). In a strict sense this is true. But there are two less strict senses in which Aristotelian places may be said to be substances. First of all, place *qua* surface falls under one of the senses of *ousia* outlined in ch. 8 of *Metaphysics* Γ. The third class of entities which may be called substance is there defined as follows:

> The parts which are present in such things [i.e. simple bodies, substances in the primary sense] limiting them and marking them as individuals, and by whose destruction the whole is destroyed, as the body is by the destruction of the plane, as some say, and the plane by the destruction of the line (Arist. *Metaph.* 1071b17–20).

Secondly, Aristotle more than once uses a reference to a thing's surrounding substance as a kind of shorthand for a proper reference to a thing's place. Think of the phrase "the whole river is the place", or of the way in which the beginning of chapter 2 of *Phys.* 4 tells us that we are in the world, in the air and on the earth, thus claiming that these are all somehow our places. It appears to me, in other words, that the label *ousia* can in a broad sense be applied to Aristotelian places. At any rate I do not see that it would be better suited to capture the three-dimensional extension of the opposite party, which, of course, is not an *ousia* in any Aristotelian sense at all.

Aristotle defines places in terms of surroundings rather than in terms of an underlying extension, and our fragment shows us that Theophrastus does so too. So in that sense the suggestion made in our fragment is not completely alien to Aristotle's thought; indeed it may count as a sensible elaboration. But it *is* an elaboration, not something which is already explicitly present in Aristotle's text. For, as noted before, in Aristotle we do seem to witness a certain reification of place: place is a surface and as such a surrounding *something* – the vessel analogy suggests as much – and hardly an epiphenomenon, as Morison seems to suggest.[62] And this arguably led to precisely the kind of problems signalled in Theophrastus' *aporiai:* as a surrounding something place may be thought to move, viz. along with the substance of which it is the surface (the subject of the second *aporia*); and bodies without a surrounding something – the outer sphere of the heavens, the heavens as a whole, intra-cosmic substances of which the surroundings are thought away – paradoxically have no place (the

62 *Ibid.*, 93.

subject of the last three *aporiai*). The fact that our fragment can thus be seen to cohere with the *aporiai* of the other fragment we discussed is one reason to take it as a cautious suggestion that one might consider an alternative view, rather than a straightforward endorsement of Aristotle. Other reasons are, as we saw, that this seems to be the way in which Simplicius, who could see the fragment in context, read it; that it makes sense of the way in which Simplicius classifies the relevant position in his final *diaeresis*, viz. as a position *different* from the position held by Aristotle; and that it makes better sense of the tentative way in which Theophrastus introduces his suggestion.

5 Strato of Lampsacus

Strato of Lampsacus became head of the Peripatetic school in Athens after Theophrastus (*c.* 287 BCE) and kept that position until his death (269 BCE). That he showed serious interest in the problems of space and void is shown by the catalogue of his works, preserved by Diogenes Laërtius 5, 59 (= fr. 1 Sharples),[63] which informs us of the fact that he wrote a Περὶ τοῦ κενοῦ (*On the Void*). The evidence suggests that in his conceptions of place and void he departed from Aristotle in three important respects:

(1) he replaced Aristotle's conception of place as a surrounding surface by the rival conception of place as a three-dimensional extension; unfortunately we do not have his arguments, but we may be sure that he was not convinced by Aristotle's arguments against this view and we may presume that he was also influenced by the puzzles raised by the first generation of Peripatetics, i. e. by Eudemus and Theophrastus;
(2) he seems to have disambiguated the use of the term *kenon:* where Aristotle uses it both to denote space as a three-dimensional extension and to denote an actual void or empty pockets in substances, Strato seems to have preferred *topos* as a term to refer to occupied space and reserved *kenon* to refer to an actual void;[64]

63 References are to the new edition of the fragments by Sharples 2011.

64 There is one passage in Simplicius (*Ph.* 618, 16 – 25) which might be taken to suggest that Strato actually identified place and void. It claims that "of those who identify place and void" some do not make void infinite, but "make it equal in extent to the corporeal universe, and say that for that reason it is empty in its own nature, but is for ever filled with bodies and is only notionally seen as existing in itself" (*Ph.* 618, 20 – 24; fr. 27b Sharples). Simplicius adds that "many of the Platonists were of this opinion, and I think that Strato of Lampsacus too held this view". But the identification of place and void is part of Simplicius' ordering *diaeresis*. "Place as

(3) although he followed Aristotle in believing that the cosmos is a plenum which as such does not contain stretches of actual void *between* substances (and does not need them to explain the locomotion of substances), he did support the notion of void interstices or empty pockets or pores *within* individual substances as a notion required to account for particular physical processes, such as compression and the propagation of light through diaphanous substances.

I cannot here discuss the complex evidence concerning Strato's theory of microvoids (items (2) and (3) in the survey above),[65] but will only add some observations on his conception of place (i.e. on (1). According to Simplicius, in the *diaeresis* with which he begins his *Corollary*, Aristotle's conception of place as two-dimensionally extended, i.e. as a containing surface, was supported by "the whole Peripatos" (*Ph.* 601, 20)). A few lines further on this same Simplicius shows that this view should be taken *cum grano salis*, when he adds Strato as an adherent of the rival view that place is three-dimensionally extended:

> Some say that it is three-dimensional. Of these some said that it is absolutely homogeneous and sometimes remains without any body, like the followers of Democritus and Epicurus, some that it is an interval, always containing body and fitted to each (ἐπιτήδειον πρὸς ἕκαστον), like the well-known Platonists and Strato of Lampsacus (Simp. *Ph.* 601, 23–24; Strato fr. 27a Sharples).

Who the Platonists here mentioned are supposed to be – and why Plato himself figures elsewhere in this diaeresis among those who think of place as completely dimensionless – remains a bit puzzling, but the reference is probably to Platonists who took their cue from the spatial characterizations of the receptacle in the *Timaeus*.[66] Perhaps we find a glimpse of such a conception in the section on the physics of Antiochus of Ascalon in Cicero *Acad.* 1, 27 which, after having claimed that matter can be infinitely divided, makes the same claim for the *intervalla* over which bodies move, i.e. presumably: space.[67] We should also note that the con-

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void" is simply his way of characterizing the conception of place as a three-dimensional extension in this overview. We cannot infer from this passage that Strato himself was prepared to equal space and void.

65 See Algra 1995, 58–70; recent assessments of the theory in Sanders 2011 and Berryman 2011.

66 On the spatial characteristics of the receptacle in the *Timaeus*, see Algra 1995, 93–110. These may also have led to the ascription to some people (presumably Platonists) of the identification of matter and void by Aristotle in *Phys.* 4, 214a14.

67 It is unclear, however, whether this account represents a kind of reconstruction by Antiochus of the common ground between Stoics and Academics, or should be traced back *in toto* to an early Academic source, as has been claimed by Sedley 2001.

ception of place as "an interval always containing body", but "empty in its own right", was also defended by Simplicius' near-contemporary Philoponus, with whose commentary on the *Physics* Simplicius was familiar.[68]

However this may be, that Strato of Lampsacus defended the conception of place or space here ascribed to him is borne out by several other pieces of evidence. First, there is a text which has often been neglected by those who studied Strato's theory of space and void, probably because it originally did not belong to any of the purely physical treatises (it is not cited by Simplicius in a physical context) and because Wehrli, rightly, printed it among the logical fragments. It is a fragment from Strato's book Περὶ τοῦ προτέρου καὶ ὑστέρου (*On prior and Posterior*) preserved by Simplicius in his commentary on the *Categories*. We are dealing with a summary by Simplicius of Strato's listing of a number of ways in which one thing can be 'prior' to another – ways which according to Simplicius can all be subsumed under the five forms of being 'prior' recognized by Aristotle (*Cat*. 14a26). Although the text is not a literal quotation, we may be sure that the examples are by Strato. After all, Simplicius' point is precisely that these examples all fit into the Aristotelian scheme. One among the various ways in which one thing can be prior to another is 'being prior by nature':

> As prior by nature, as [i.e. in Aristotle's terms] not admitting of a reversal of the order of being/of the ontological priority (ὡς μὴ ἀντιστρέφον κατὰ τὴν τοῦ εἶναι ἀκολούθησιν [we may regard Strato's example of] that which is capable of existing when the other does not exist, like place (*topos*) in relation to body and body to colour (Simp. *Cat*. 432, 1ff.; Strato fr. 15 Sharples).

In the same context place is also adduced as an example of yet another kind of priority: it is also said to be prior to time in so far as it does not participate in coming to be and passing away. Together these claims make clear that we are dealing with the un-Aristotelian conception of place as a self-subsistent three-dimensional extension. The view that there is such a place or space and that it is ontologically prior is listed by Aristotle among the general *phainomena* from which his investigation in *Phys*. 4 takes its start. He takes it to be implied by Hesiod's talk about the role of chaos in the cosmogony (*Phys*. 4, 208 b34 – 209a3), but he himself of course in the end rejects it:

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68 According to Philoponus, place is "empty in its own definition" (*Ph*. 560, 11 – 12) and "bodiless in its own definition: dimensions alone, empty of body" (*Ph*. 567, 30 – 33). On Simplicius' reaction to Philoponus, see Hoffman 1987. On parallels between the respective commentaries on the *Physics* by these two authors, see Algra 2012, 10 – 11.

> If place were such, its power would be astonishing, and prior to all other things (πρότερα πάντων). For that without which nothing else is, but which can itself exist without all other things, is necessarily prior to everything else. For place [in that case] is not destroyed when the things in it are destroyed (Arist. *Phys.* 4, 208b34–209a3).

Our passage in Simplicius, though not a *verbatim* quotation, suggests that Strato was prepared to turn the tables on Aristotle on precisely this point, and to defend the very ontological priority of space which Aristotle thought would be 'astonishing'.

Strato's heterodox conception of place was not only reflected in the commentaries of Simplicius, but also in the doxographical tradition. Stobaeus, in a passage which appears to combine materials from Aët. 1, 18 and 1, 19 in Diels' reconstruction, offers the following doxographical information:

> Strato said that there is no void outside the world, but that it can come to be within it – and he said that space/place (*topos*) is the extension between container and contained (τὸ μεταξὺ διάστημα τοῦ περιέχοντος καὶ τοῦ περιεχομένου) (Stob. *Ecl.* 1, 18, 1b, p. 156, 4–6 Wachsmuth).

We seem to be dealing with a slightly garbled version of the formula Aristotle uses to describe the conception of place as a three-dimensional extension, as one of the four possible candidates for being place: τὸ μεταξὺ τῶν ἐσχάτων (*Phys.* 4, 211b8). In Aristotle the context makes clear that the ἔσχατα he has in mind are the ἔσχατα τοῦ περιέχοντος. In the doxographical context of Aëtius the addition of the superfluous words καὶ τοῦ περιεχομένου was probably triggered by the co-occurrence of the terms 'surrounder' (περιέχον) and 'surrounded' (περιεχομένον) in the previous *doxa* (on Aristotle: τὸ ἔσχατον τοῦ περιέχοντος συνάπτον τῷ περιεχομένῳ).[69]

This testimony also refers to Strato's conception of the void. As we noted, Strato claimed that we need to conclude that there is such a thing as pocket-voids within substances (in order to explain particular phenomena such as the propagation of light through transparent substances such as water), but that separate stretches of void are not required as a natural feature of the world. The world is a *plenum* of substances, and Strato subscribes to the Aristotelian theory of *antiperistasis:* bodies replace each other without needing an empty place to move into first. In other words, the fact that bodies need a separate place or space to move *through* does not imply that they need an empty place to move *into:*

69 On the text, see the contribution by Mansfeld in this volume, pp. 181–199.

> If you drop a pebble into a vessel filled with water and invert the vessel, blocking the exit at the mouth, the pebble moves to the mouth of the vessel as water moves around into the place of the pebble. The same thing happens with swimmers, and fish, and so on (Simp. *Ph*. 659, 20 ff.; Strato fr. 29 Sharples).

This means that Strato here basically follows Aristotle:

> Nor do we need the void to explain change of place, since it is possible for things to make way for one another without there being any separate extension besides the moving bodies. It is as easy to see this in the case of rotation of continuous objects as it is in the rotation of liquids (Arist. *Phys*. 4, 213a28 – 32).

However, he obviously does not share Aristotle's conclusion that such an independent extension is non-existent. In fact, his commitment to the existence of pocket voids, combined with his commitment to an underlying independent three-dimensional extension, even allowed Strato to leave open the possibility of such an extended intra-cosmic and 'inter-substance' void being produced artificially. Hence, presumably, the claim that "it can come to be within it" in Stobaeus' testimony.[70] In addition, both Simplicius and Stobaeus explicitly claim that Strato denied the possibility of an extra-cosmic void. For him – as, many centuries later for Philoponus – space as extension was finite and completely co-extensive with the equally finite cosmos. As a critic of Aristotle he was to be outdone in this respect by Xenarchus of Seleucia, two centuries later.

It is unfortunate that on some important issues (his rejection of Aristotle's conception of place, but also of the idea of an extra-cosmic void) we only know Strato's tenets, not his arguments. However, the evidence leaves no doubt that he accepted the main rival conception rejected by Aristotle and refused to follow Aristotle's own theory of place.

6 Xenarchus of Seleucia, Cleomedes, Alexander of Aphrodisias

In the late Hellenistic period, when Stoic cosmology had gained a certain dominance, Aristotelians had to take their stand *vis-à-vis* the Stoic conception of

70 This is the position defended by Hero of Alexandria (*Pneum*. p. 28, 9 – 11 Schmidt: ὅτι κενὸν μὲν ἄθρουν οὐκ ἔστι κατὰ φύσιν βίας τινὸς μὴ παρεισελθούσης), in a passage which is usually taken to be heavily dependent on Strato (it has been included as fr. 30b in the edition of Sharples).

space, and of the extra-cosmic void in particular. In principle they could do this on the basis of the arguments offered by Aristotle in chapters 6 to 9 of *Physics* 4 and at the end of the first book of the *On the Heavens*. In *Phys*. 4, 6–9 Aristotle offers a range of arguments to show that the void does not and cannot exist. Some of these arguments simply conceptualize the void as an independent three-dimensional extension, so that there is some overlap between this discussion and the critique of the conception of place as extension in the first sections of *Phys*. 4. For our purpose the most relevant arguments are two that concern the ontology of such an extension (whether occupied or empty):

(1) There is basically only one type of extension, and that is the extension of substances (cf. 216b9–10: "what will be the difference between the body of the cube and the void and place which are equal to it?")
(2) Places (on the basis of Aristotle's own theory, that is) are always the places *of* emplaced substances (cf. 216a23–26: "Some people think that without a void, separated off in its own right, there could be no change of place. But this is no different from claiming that there is such a thing as place in isolation from what occupies it, and I have already argued that this is impossible").

So the conception of the void used (and rejected) by Aristotle is basically the conception of place as an independent three-dimensional extension. And in fact, once conceived as independent, such an extension can also be conceived as empty, i.e. as void. The first of the arguments just quoted argues against this conception by claiming that extension is always the extension *of some substance*, the second makes a similar claim for places: they are always the places *of something*. This means that places and emplaced bodies are actually correlatives: just as every body is in a place, so every place is the place of a particular body. It is clear from our examination of Strato that he rejected argument (1) in so far as he was prepared to accord ontological priority to space; but we may presume that he also rejected (2). After all, he did not regard an empty place as a conceptual impossibility, even if he also maintained that the cosmos is as a matter of fact structured in such a way that such an empty place will not *naturally* occur. In the case of the first century BC Peripatetic Xenarchus of Seleucia, however, we have evidence of an *explicit* rejection of (2).

According to his pupil Strabo, the Peripatetic Xenarchus of Seleucia taught in Alexandria, Athens and, finally, Rome, and was befriended by Arius (probably Arius Didymus) and by the emperor Augustus.[71] In his commentary on Aristotle's

71 Cf. Strabo 14, 5, 4.

On the Heavens Simplicius provides us with a whole list of arguments from Xenarchus' work *On the Fifth Substance* in which he criticized Aristotle's claims (*Cael.* 1, 2) concerning the existence of a fifth element with a circular natural motion.[72] These arguments show that he was prepared to dissent from Aristotle on crucial points. Elsewhere in the same commentary Simplicius quotes Alexander of Aphrodisias reporting an equally heterodox argument of Xenarchus concerning the void (possibly, but not necessarily, also deriving from *On the Fifth Substance*). It concerns Aristotle's argument that there neither is nor can be void, space or time beyond the heavens (*Cael.* 1, 9, 279a12–18).

The relevant passage in Simplicius (*Cael.* 285, 27–286, 15 Heiberg) shows that Alexander quoted it as a possible counterargument in the context of his own polemical discussion of the Stoic conception of an extra-cosmic void, which adduced three arguments:

(1) the existence of an infinite void implies the existence of an infinite body which can fill up this void, which, even on the Stoics' own presuppositions, is absurd;
(2) why wouldn't the cosmos move through such a void rather than be stable?
(3) the cosmos could move in all directions at once and hence be dispersed into the void; god, qua fire, could not keep it together.

Arguments (2) and (3), which deal with the alleged cosmological consequences of the existence of an extra-cosmic void, are clearly polemical and *ad hominem* against the Stoics, for they disregard Aristotle's own point that void would actually *preclude* motion (*Phys.* 4, 214b28–33). Argument (1) is the interesting one in the context of our present investigation, for it regards the nature of the void and the way it relates to body. Moreover, unlike arguments (2) and (3), it takes its cue from Aristotle, namely from a passage in the first book of *On the Heavens:*

> It is obvious that there is neither place, nor void, nor time outside the heavens, since it has been demonstrated that there neither is, nor can be body there (Arist. *Cael.* 1, 279a16–18).

This Aristotelian argument (implicitly) presents body and void as correlatives, and Alexander follows suit. He gives an additional anti-Stoic twist to it by focusing on the presumed *infinity* of such a supposed extra-cosmic void:

> Alexander says [...] that if the void is infinite, as Chrysippus claims, and if they say the void is that extension which, while being capable of containing a body, does not actually contain

72 On the preserved fragments from *Against the Fifth Substance*, see Kupreeva 2009, 151–156.

> it, and if it is necessary in the case of relatives that if the one exists, the other exists as well, it follows that if there is that which can contain, there is, or can be, also that which can be contained. However they themselves say that there is no body that can be contained by the infinite void, and indeed such a body does not exist. Therefore that which can contain it does not exist either (Simp. *Cael*. 285, 27–286, 2).

Cleomedes, who wrote his Stoicizing cosmology in the first or second century AD, shows us that the Stoics were aware of Peripatetic criticisms of this kind and that they responded to them. He records versions of all three arguments.[73] He also gives us the Stoic responses. His responses to (2) and (3) need not concern us here.[74] Against argument (1), that void (as container) and body (as contained) are correlatives, he claims that "vessel of a body" (ἀγγεῖον σώματος) may be taken in two ways: as 'the container of the contained' (in which case, we may add, we are indeed dealing with correlatives) and as 'that which *can* contain', which may, as a matter of fact be empty.[75] He addresses the issue of infinity in a separate argument: void and the cosmic body are not only not correlatives, but the one is by its own nature (or rather: in its own conception (ἐπίνοια)) infinite and the other by its own nature finite; moreover, he claims (now arguing from a strictly Stoic point of view), there cannot exist a *hexis* which keeps an infinite body together (so we do have an argument against the conception of an infinite body, whereas we do not have such an argument against the conception of an infinite void).[76]

Back to Alexander. Immediately after the passage just quoted he inserts a counter-argument by Xenarchus of Seleucia which is comparable to, though also slightly different from, the first half of this Stoic defence offered by Cleomedes,[77] thus showing that this kind of debate between Peripatetics and Stoics was already going on in the first century BC:

> Xenarchus changed 'that which can contain' (τὸ οἷόν τε δέξασθαι) into 'the container' (τὸ δεκτικόν), thus trying to solve the problem arising for this position in virtue of the relativity

73 In view of some slight differences between the way the arguments are presented in Alexander and Cleomedes, I do not think that it was Alexander's text to which Cleomedes replied; see Algra 2000, 171–172. On the date of Cleomedes, see Bowen / Todd 2004, 2–4; and Algra 2000, 165–168.

74 They are, briefly, that the cosmos does not move, because it exclusively has its own centre as 'down' and hence as the focus of motion; and that the cosmos does not disperse, because it is held together by its own *hexis*, whereas the void is inert. Fuller discussion of the arguments and parallels in Algra 1988.

75 Cleom. *Cael*. 1, 1, 81–88 Todd.

76 *Ibid*., 1, 104–111 Todd.

77 The passage paraphrased by Alexander does not address the issue of infinity.

> ⟨of the concepts⟩. However, this change did not really help. For the 'container' is nothing else but 'that which can contain', and as such it remains a relative (Simp. *Cael.* 286, 2–6).

It is unfortunate that we do not have more information about the context in which Xenarchus' argument was embedded. It is clear, however, that by distinguishing between (a) the void as what can contain a body, in the sense that, given the nature of things, it may in fact at some point contain a body, and (b) the void as simply in its own nature capable of receiving a body, even if it never will, Xenarchus rejected Aristotle's conception of place and body as correlatives and thus defused this particular Peripatetic argument against the Stoic position.

Paul Moraux made the stronger claim that Xenarchus even tried to *defend* the Chrysippean conception of an infinite extra-cosmic void.[78] It is true that the formula which Xenarchus corrects in the above passage – "that which can contain" (τὸ οἷόν τε δέξασθαι) – resembles the *Wortlaut* of the preserved Stoic (Chrysippean) definition of place and void (which speak of τὸ οἷόν τε κατέχεσθαι ὑπὸ ὄντος),[79] and has no counterpart in the ninth chapter of the first book of Aristotle's *On the Heavens*. But even if we are dealing with a conscious adaptation, this does not in itself show the extent of Xenarchus' commitment to the Chrysippean view. For all we know, he may merely have wanted to show that the arguments of contemporary Aristotelians, who based themselves on Arist. *Cael.* 1, 9, were unsuccessful against the Chrysippean conception of the void, in that they failed to show that such a void was inconceivable. True, his conviction that an independent extra-cosmic extension is conceivable means that he must have remained unconvinced by Aristotle's arguments against the conception of place as extension and that it is extremely unlikely that he was committed to Aristotle's own conception of place. But we still cannot exclude the possibility that he himself subscribed to the Stratonian conception of a finite space. After all, although other fragments do indeed show traces of Stoicizing tendencies in Xenarchus' work,[80] there is no reason to assume that he accepted the idea of a periodical conflagration, which for the Stoics was the physical *raison d'être* of the extra-cosmic void. On the other hand, he may not have needed such physical or cosmological arguments. He may have gone beyond Strato in taking the full consequences of the rejection of the correlativity of body and void, and in accepting the type of argument provided by Cleomedes, according to which space or void,

78 Moraux 1973, 202.

79 See Algra 2002 for the origins and interconnection of the preserved Stoic definitions of place, space and void.

80 On which see Moraux 1973, 210–212.

once conceived as independent, is in its own nature (or in its own conception) infinite. However this may be, in the context of our present survey the interesting thing is that the evidence on Xenarchus offers us a second example, next to Strato, of a straightforwardly heterodox conception of place within the Hellenistic Peripatos.

7 Sextus Empiricus and Hellenistic discussions of place

We may take the evidence on Xenarchus, and the arguments of Alexander and Cleomedes as signs of a growing polemical interaction between the Peripatos and the Stoics, starting from the renaissance of Aristotelian philosophy in the first century BC, when the main texts of the *corpus Aristotelicum* became widely available again.[81] Two aspects of this interaction seem to be noteworthy, although the fragmentary nature of our sources sets severe limits to the security of our conclusions.

First of all, the interaction appears to be late: there are no signs that the early Peripatetics – Eudemus, Theophrastus, Strato – reacted to the Stoic conceptions of place, space or void. This is not surprising. When Strato became scholarch in the early eighties of the third century, Chrysippus was still to be born. And it was arguably Chrysippus who worked out the Stoic theory of space in all its details.[82] Conversely, there are no signs that Chrysippus knew or reacted to Aristotle' theory of place, and in general the evidence suggests that by the mid third century Aristotle's physical works were no longer widely known and studied. Chrysippus appears to have been a lively polemicist, but he appears to have directed his arrows primarily at what was by now becoming the most important rival school: the Garden.[83]

Secondly, it also appears that the interaction was rather one-sided. We have evidence of Peripatetic attacks of the Stoic position in the fragments of Xenarchus and Alexander, and in the treatise of Cleomedes. On the Stoic side we only find Cleomedes' *reaction* to these attacks; no evidence of original anti-Aristotelian polemics. Of course this general picture may in principle be merely an

81 For the present purpose I suspend judgement on the supposed role of the 'edition' of Andronicus in this renaissance; for a sceptical examination of the evidence see Barnes 1997.
82 For the evidence see Algra 2002, 175.
83 On Chrysippus' polemics against the Epicurean conception of the void cf. Plu. *Stoic. rep.* 1054e.

artefact of the lacunose transmission of the primary evidence. But it may also have something to do with the fact that the Aristotelians now had texts like the *Physics* and the *De Caelo* at their disposal, in which Aristotle himself had argued against the most important rival conception of place as an independent extension, whereas the Stoics could find no similar anti-Aristotelian ammunition in the works of their own founding fathers.

This general picture appears to be confirmed by the evidence from Sextus Empiricus. In the partly parallel chapters devoted to the subject of place in *PH* 3, 119–135 and *M* 10, 1–36 he presents arguments against the two main conceptions of place that were around at the time: the Stoic view of place (*topos*) as a three-dimensional container (*hypodektikos*), and the Aristotelian view of place as a surrounding surface (*periektikos*).[84] One might perhaps expect him to use Stoic arguments against the Peripatetics and *vice versa*, but this is not what we encounter. His proximate source or sources are probably collections of arguments put together by earlier sceptics: at *M* 10, 20 the anti-Stoic arguments are introduced as "coming from the sceptical tradition" (τὰ ἀπὸ τῆς σκέψεως). But his ultimate sources for both the critique of the Stoic conception and the critique of its Aristotelian counterpart appear to belong to the Aristotelian tradition.

In the account of *PH* 3 we find the arguments against the Stoic conception of place as a three-dimensional container at *PH* 3, 124–130. They revolve around the alleged impossibility of conceiving a *diastēma* – the central term in the Stoic definitions of spatial concepts – independent of the dimensions of the emplaced body: "how do they conceive of it as an extension?" (πῶς καὶ λέγουσιν αὐτὸν εἶναι διάστημα, 3,125). Three arguments are given.

According to the first argument (3, 125–126), the word *diastēma* ('extension') must refer either to just one dimension or to the three of them (αἱ τρεῖς διαστάσεις). In the former case place will not be equal to the emplaced body; moreover, place will, absurdly, be part of the emplaced. In the latter case we must conclude that, since there is no void space available in the place at issue (for *qua* place it is occupied) nor any body other than the body occupying the place, there is only the emplaced body with its three dimensions (and additional 'resistance' or *antitypia*). This means that the body (the only three-dimensionally extended entity available) will be its own place. This argument of course ignores the fact that for the Stoics "that which is capable of being occupied by body" (τὸ οἷόν τε ὑπὸ σώματος κατέχεσθαι) – i.e. the formula which constitutes the com-

84 Unlike the account in *PH* 3, the account of place in *M* 10 also discusses the views of Epicurus (*M* 10, 1–5) but it is clear that Stoics and Epicureans are taken together as representatives of the same type of conception of place (viz. as *hypodektikos*). See Algra 2014.

mon denominator of *topos*, *chōra* and *kenon* – was conceived as independent of the emplaced body.[85]

The second argument (3, 127–128) is based on the assumption that the dimensions cannot be twofold (ἐπεὶ διπλαῖ αἱ διαστάσεις οὐ θεωροῦνται), i.e. that we cannot have two overlapping 'sets' of three dimensions. As a result, either the dimensions of the body or those of place or the void (with which place is here identified for the sake of the argument) will turn out to be non-existent, or else the two will coincide, and body will be void. Both conclusions are absurd, so there is no separate dimension of place (τόπου διάστασις), hence no place.

The third argument (3, 129) starts out from the definition of the void as "that which can receive body", arguing that on the approach of body void must either remain (in which case void and plenum are the same), or move away, or perish (in the latter two cases void will be body, for the capacities to move and to perish are typical of bodies). All three possibilities are said to be untenable, although we may note that the Stoics would have no problem with opting for the first possibility. For precisely *qua* "that which can receive body", the void will remain what it is, also when occupied by body, although it will no longer be labelled 'void'.

These criticisms of the Stoic position are presented as traditional, or at least as shared by others.[86] As noted above, the sceptical tradition may have been their proximate source. Ultimately, however, they appear to be of Peripatetic origin. In the end they all revolve around the supposed inconceivability of an independent three-dimensional *diastēma*. In this respect they appear to go back to Aristotle's discussion and rejection of the conception of place as a three-dimensional extension in *Phys.* 4. In Sextus' first two arguments we find the traces of Aristotle's argument that "what is in between a place is whatever body it may be, but not the extension of a body" (σῶμα γὰρ τὸ μεταξὺ τοῦ τόπου, ἀλλ' οὐ διάστημα σώματος, *Phys.* 4, 212b26–27), and of his assumption that "if there are two such things, why shouldn't there be an infinity of them in the same spot?" (καὶ εἰ δύο τοιαῦτα, διὰ τί οὐ καὶ ὁποσαοῦν ἐν τῷ αὐτῷ ἔσται, 216b10–11), so that "there will be many places together" (πολλοὶ τόποι ἅμα ἔσονται, 211b24). But also the third argument provided by Sextus, claiming that the void should

85 Note that it also polemically exploits the Stoic definition of body as "what has three dimensions plus resistance" (τὸ τριχῆ διάστατον μετὰ ἀντιτυπίας, Gal. *Qual. incorp.* 10 = *SVF* 2, 381), as if that formula meant that *antitypia* is just an accident to the underlying "substance constituted by the three dimensions" (ἣ δὴ συμβεβηκέναι λέγεται ταῖς διαστάσεσιν ταῖς προηρημέναις, *PH* 3, 126).

86 Cf. *PH* 3, 125: *λέγεται* οὖν ὅτι κτλ.; and 3, 131: ταῦτα μὲν οὖν καὶ ἔτι πλείω πρὸς τὴν στάσιν τῶν Στωικῶν περὶ τόπου *λέγεται*.

either remain, or move away or perish at the approach of a body can to some extent be traced back to Aristotle: at *Phys.* 4, 216a26 ff. the option of a moving void is rejected whereas the option of a remaining void runs up against the difficulty of how to distinguish its dimensions from the dimensions of the occupying body.

The anti-Stoic arguments offered in the parallel section in *M* 10, 19 – 23 are comparable in nature and need not detain us further here. Instead, we may turn to the anti-Peripatetic arguments as offered in *PH* 3, 131 – 133 and *M* 10, 24 – 36. It is striking that, whereas the arguments against the Stoics are written from a non-Stoic perspective, i. e. from the point of view of an Aristotelian ontology, the anti-Peripatetic arguments focus on difficulties *within Aristotle's theory itself*. Indeed we encounter three of the difficulties that had been identified by Eudemus and Theophrastus.

We may note, to begin with, that the arguments against the Peripatetic conception of place offered at *PH* 3, 131 – 133 revolve around the fact that this place is ontologically dependent on there being both an emplaced body and a surrounding body, which means that such a place cannot be conceived of as pre-existing, and hence can play no role in the description of locomotion. A first argument (quoted above, in section 3 of this paper) claims that, when conceived in advance as the final destination of a particular moving body, such a place would necessarily both be (i. e. as a pre-existent place awaiting the body which is to fill it) and not be (i. e. because it does not exist as a surrounding surface prior to the advent of the body) at the same time. A second argument claims that if such a place exists, it must be either created or uncreated; yet both possibilities turn out to be inconceivable, given the specific requirement that place should somehow be moulded around the emplaced body. Hence it cannot exist. As suggested in section 3 of this paper, this problem was already signalled by Eudemus.

Furthermore, *M* 10, 24 – 36 offers us two other arguments that appear to go back to the discussions within the early Peripatos. At *M* 10, 24 Sextus claims that place as a surrounding limit would have to be either corporeal or incorporeal, but that both options lead to difficulties – the former because place would be a body and hence itself in place, the latter because place would then turn out to be a surface (ἔσται ἑκάστου σώματος τόπος ἐπιφάνεια). This, Sextus adds, is absurd, since a surface is not dimensionally equal to the emplaced body – an objection which appears to have been raised by Theophrastus as well, in fr. 146 FHSG. And at *M* 10, 35 – 36 Sextus points to the absurd consequence that on the Aristotelian view the heavens are not in a surrounding place – which he glosses by saying that they are, absurdly, "in themselves", or that they are their own place. As we saw, also this problem of the emplacement of the heavens was taken up by Theophrastus in fr. 146 FHSG.

The sceptical nature of the proximate sources used by Sextus shows itself in the often typically dilemmatic surface structure of the arguments ("if place exists, it must be either corporeal or incorporeal etc."). But the underlying philosophical arguments appear to be mainly Peripatetic in origin, and this may be taken to emphasize that the philosophical debate between Aristotelians and Stoics on place in the late Hellenistic and early Imperial period was largely determined by the Peripatetics and by their exploration of the arguments in Aristotle's *Physics* and *On the Heavens*. The arguments directed against Aristotle's own conception of place, on the other hand, also show that some of the problems and objections concerning Aristotle's conception of place, as they had been conceived within the early Hellenistic Peripatos, were still around in the first two centuries AD, presumably also within the Aristotelian tradition itself, and that they had as yet not lost their force.

8 Conclusions

There is clearly a lot that we do not know about the early Hellenistic discussions of Aristotle's theory of place: to what extent precisely was Theophrastus committed to Aristotle's theory and how seriously did he think his *aporiai* compromised Aristotle's position? What were Strato's reasons for rejecting Aristotle's theory? However, the evidence does provide us with sufficient indications, first, that Aristotle's theory was thought to contain some serious weaknesses; secondly, that Eudemus (to a lesser extent) and Theophrastus (to a greater extent) were responsive to these weaknesses; and thirdly, that Strato and Xenarchus defended a different theory altogether. I do not think that Morison's ingenious interpretation of Aristotle and his equally ingenious new interpretation of the evidence on Theophrastus give us strong reasons to change this picture of the early Peripatetic reception of Aristotle's theory. In fact, for all we can see, Morison's interpretation finds no support in the (admittedly: scanty) evidence on Aristotle's earliest followers.

These early discussions influenced the later tradition in so far as they were transmitted by people like Alexander of Aphrodisias and taken up again in the large commentaries of Simplicius and Philoponus. There are two strands visible within this tradition. The orthodox followers of Aristotle such as Eudemus and Alexander, and the sources of the anti-Stoic arguments in Cleomedes and Sextus accepted Aristotle's ontological claim that there is only one type of extension in the physical world, viz. the extension of substances, and they stuck to he principle of the correlativity of body and place. In doing so the later Hellenistic Peripatetics came up with arguments against the Stoic conception of place and void

which were ineffective in so far as they disregarded the fact that the Stoics were committed to a different ontology which allowed them to posit space as a self-subsistent incorporeal and to deny the correlativity of body and void. At the same time these orthodox Peripatetics had to discuss, and find their way around, the kind of problems inherent in Aristotle's theory of place that had been signalled by Eudemus and Theophrastus. We find traces of both their anti-Stoic attacks and their internal discussion of Aristotle's theory in Sextus' sceptical discussion of place in *PH* 3 and *M* 10.

The other strand – the minority one – starts with Strato, continues with Xenarchus and may arguably be said to lead up to Philoponus' conception of space as defended in his *Corollary on Place*. These philosophers had to posit the ontological independence of place or space, as Strato explicitly did, and to reject the correlativity of body and place, as was explicitly done by Xenarchus in his defence of the possibility of an extra-cosmic void. As a physical theory of place this theory was much more effective than its orthodox Aristotelian counterpart and it managed to steer free of all the problems raised for Aristotle's theory by Theophrastus and others. The drawback was that for Aristotelians it remained unclear what then the ontological status of this supposedly absolute space had to be. Philoponus makes clear that, faced with this dilemma, we have to opt for the physically preferable option and be prepared to revise our ontology in any way that is necessary. But the majority of ancient Aristotelians made the opposite choice, sticking to the Aristotelian substance ontology and being thus prepared to live with a physically less than perfect theory of place.

Michele Alessandrelli

Aspects and Problems of Chrysippus' Conception of Space

In this paper I will be examining three important concepts in Chrysippus' physics of space: those of τόπος, κενόν, and χώρα. Based on the evidence from the most relevant texts for this topic,[1] I shall argue that Chrysippus had a counter-intuitive conception of place and that he introduced the concept of χώρα (on the basis of two controversial definitions)[2] in order to compensate for one inconvenience of this conception of τόπος. It was a matter for him of accounting for human beings' everyday experience of intra-cosmic spaces as permanent extensions that may be accessed: for his counter-intuitive conception of place fell short in this respect. I shall then argue that in the most important source for Chrysippus' conception of space, fr. 25 of Arius Didymus, evidence is also provided for a problematical and quasi-dialectical stage of Chrysippus' reflection on void.

Chrysippus' definitions of χώρα were accepted in essence yet formally rejected by most Stoics. As a result, a definition of χώρα was developed that is very similar, in its formulation,[3] to the way in which Chrysippus – in the passage from Stobaeus[4] – describes the οὐκ ὠνομασμένον ὅλον stemming from the co-presence of occupied and unoccupied space. With regard to this matter, I will be suggesting that later Stoics, however, did not take this concept of χώρα to denote a genuine co-presence of full (place) and void. Rather, a distinction was drawn between a rigorous notion of occupied space (place) and unoccupied space (void) on the one hand, and a weaker and more informal one on the other. According to the latter, occupied space is simply that which cannot be accessed, whereas unoccupied space is that which can be accessed. Chrysippus' second definition of χώρα[5] was possibly taken up and partly misinterpreted by a minority faction within the Stoic school.[6] I will also suggest that starting

English translation by Sergio Knipe. I wish to thank Richard Bett, Charles Brittain, Carlos Lévy, Jaap Mansfeld, Graziano Ranocchia and Voula Tsouna for their useful advice.

1 Ar. Did. fr. 25 *ap.* Stob. *Ecl.* 1, 18, 4d (*SVF* 2, 503 = Long/Sedley 1987 T. 49 A); Aët. 1, 20, 1; S.E. *M* 10, 3 – 4.

2 Stob. *Ecl.* 1, 18, 4d.

3 *Ibid.*

4 *Ibid.*

5 *Ibid.*

6 S.E. *M* 10, 4.

from a reflection on the nameless entity stemming from the co-presence of full (place) and void, either Chrysippus or his disciples ultimately came to draw a distinction between the whole (ὅλον) and the all (πᾶν).[7]

I will now be examining the testimony recording Chrysippus' conception of τόπος and χώρα and κενόν.[8] I shall attempt to construct a conceptual framework as consistent as possible by examining this passage and comparing it with two other important accounts, those of Aëtius and Sextus Empiricus.[9] What these most probably present is the official and orthodox position of the Stoa.[10] Sextus' testimony also provides evidence for what would appear to have been a minority position within the school[11] (as concerns the concept of χώρα). The issue will be to understand what Chrysippus' contribution consisted in and how it was met within the school.

Chrysippus may be credited with the content of fr. 25 of Arius Didymus. This source provides a few definitions (of place and χώρα), raises a problem (regarding the possible co-presence of full and void in the universe), and presents a series of considerations concerning void. The first spatial entity it tells us about is place:

> Chrysippus argued that place (τόπος) is what is entirely occupied by what exists (τὸ κατεχόμενον δι' ὅλου ὑπὸ ὄντος), or what can be occupied by what exists and is entirely occupied by one thing or by several things (ἢ τὸ οἷόν ⟨τε⟩ κατέχεσθαι ὑπὸ ὄντος καὶ δι' ὅλου κατεχόμενον εἴτε ὑπὸ τινὸς ⟨εἴτε⟩ ὑπὸ τινῶν).

Let us ask ourselves if what we have here is a single definition, formulated in two different ways, or rather two distinct definitions of the concept of *topos*. A comparison with the other two passages in question, from Aëtius and Sextus, might offer, perhaps, a few clues on the matter. Aëtius and Sextus Empiricus, however, provide a definitional statement that only matches the first of Chrysippus' two statements.[12] These texts, therefore, would all appear to be presenting the same problem: if what we have is a single definition, formulated in two distinct ways, then it would seem that the orthodox Stoics simply chose the most simple formula; if, by contrast, what we have are two distinct definitions, then these

7 *SVF* 2, 522–525.
8 Stob. *Ecl.* 1, 18, 4d (fr. 25 Arius Didymus).
9 Aët. 1, 20, 1 and S.E. *M* 10, 3–4.
10 Algra 1995, 268.
11 *Ibid.*, 268.
12 Aët. 1, 20, 1 (Stob. *Ecl.* 1, 18, 1d); S.E. *M* 10, 3.

philosophers must have chosen the first definition, leaving the second one aside. What we ought to do, then, is examine the content of these two definitional statements to see whether they lead to two different conceptions of place.

In lexical terms, the second definitional statement is richer than the first. We find two elements in it that are missing from the first statement. The first of these is the locution τὸ οἷόν ⟨τε⟩ κατέχεσθαι ὑπὸ ὄντος. The second element is the expression ὑπὸ τινὸς ⟨εἴτε⟩ ὑπὸ τινῶν.

Let us start from the latter. Does the locution ὑπὸ τινὸς ⟨εἴτε⟩ ὑπὸ τινῶν possess the same meaning and value as ὑπὸ ὄντος? On the one hand, since both expressions occur in the same definitional statement and are connected by the use of καί rather than ἤ, they must indeed have the same meaning. On the other hand, the plural form τινῶν poses a problem. How are we to interpret it? One possible interpretation is that Chrysippus here may be considering an existent from the point of view of its constitutive elements, which, despite their mutual interpenetration, preserve all their individual characteristics, thus remaining distinct from one another.[13] Another possibility would be to argue that Chrysippus is here considering an existent from the perspective of the relation between the whole and its parts. As a whole, the existent is a *ti*, but as a sum or collection of parts it is instead a multiplicity, hence the use of *tina*. Both interpretations are possible; indeed, we cannot rule out that Chrysippus had both meanings in mind, regarding them as mutually compatible. By contrast, we should rule out a third possible interpretation: that by the use of τινῶν Chrysippus is suggesting that the same place can be occupied in different times by different existents. For we shall see that each place is the place of a body, and one only. If any multiplicity exists, it must be intrinsic to the occupying body.

One conclusion that may immediately be inferred from this is the following: one of the two lexical differences we have noted would appear to merely consist in a conceptual specification rather than any real change in terms of content.

Let us now turn to consider the expression τὸ οἷόν ⟨τε⟩ κατέχεσθαι ὑπὸ ὄντος.[14] This occurs at three different points in Arius Didymus' fragment: in

13 Brunschwig 1988, 95.

14 According to Algra 1995, 270 – 271, the Stoics used this expression to describe a general concept of space, implied in all their various definitions of place, void and χώρα. For the same purpose they also employed the expression διάστημα (S.E. *M* 10, 3). In this respect, place and void would be two species of a more general and abstract entity we may call space. By contrast, I believe that this expression is indicative of the somewhat paradigmatic role of the incorporeality of void according to the Stoics in general and Chrysippus in particular. On this, cf. D.L. 7, 140. This passage states that void is infinite and incorporeal, and that precisely by virtue of its incorporeality it is τὸ οἷόν τε κατέχεσθαι ὑπὸ σωμάτων οὐ κατεχόμενον. According to the Stoics,

its definition of place[15], in its description of the nameless compound stemming from the co-presence of place and void,[16] and in the first definition of χώρα.[17] In Sextus' account the expression only occurs in relation to the definition of void,[18] whereas Aëtius makes no mention of it at all.[19]

Given the importance of this expression, let me also make a few preliminary observations about it.

In order to be "capable of being occupied by an existing body", a portion of space must be conceived of as being free and unoccupied. With regard to this matter, I wish to propose the following hypothesis. The expression "unoccupied" may be understood in two different ways: either as a complete absence of body, which is to say as void;[20] or as the absence of any impenetrable bodies which, by putting up resistance, might make the occupied portion of space inaccessible and out of bounds. In this case, what we would have is not void, but merely the presence of diffused and penetrable bodies, such as air for instance.

Vice versa, the expression "occupied by" may also be understood in two different ways: either in the rigorous sense of a space that is utterly full, or in the more informal sense of a space that is not free, since it is occupied for the most part by bodies that put up a resistance and hence is out of bounds.

What I would suggest is that the uses of the expression τὸ οἷόν ⟨τε⟩ κατέχεσθαι ὑπὸ ὄντος in the fragment from Arius Didymus and in the passage from Sextus are all to be understood in the former sense, except in relation to Chrysippus' first definition of χώρα. In the case of Chrysippus' definition of place, as we shall soon see, the locution is used to express a particular possibility. The participles τὸ κατεχόμενον ὑπὸ ὄντος (*definiens* of place in Aëtius and Sextus) and μὴ κατεχόμενον (*scil.* ὑπὸ ὄντος: *definiens* of void in Sextus) are also to be understood in the former sense. By contrast, the use of this expression in the first of Chrysippus' two definitions of χώρα poses some problems. If we understand the expression according to the first of the two meanings I have outlined, we are forced to credit Chrysippus with the idea of χώρα as a co-presence of full and void. Yet

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such a close connection exists between void as 'τὸ ἀσώματον' and void as 'τὸ οἷόν τε κατέχεσθαι ὑπὸ σωμάτων οὐ κατεχόμενον' that the two expressions should be seen as being almost conceptually equivalent. For this reason, I believe that for the Stoics the expression τὸ οἷόν ⟨τε⟩ κατέχεσθαι ὑπὸ ὄντος represented a kind of indicator of spatial incorporeality.

15 Stob. *Ecl.* 1, 18, 4d.

16 *Ibid.*

17 *Ibid.*

18 S.E. *M* 10, 3.

19 Cf. also Cleom. *Cael.* 1, 1, 86 – 88 Todd. In this passage, the expression is used to refer to void. Instead of κατέχεσθαι, however, we find δέξεσθαι.

20 D.L. 7, 140.

from the same Arius Didymus fragment we learn that Chrysippus did not at all conceive of this ὅλον as χώρα, for he regarded it as a mere cosmic possibility, which as such has no name yet. His use of the expression, then, only becomes intelligible when it is understood in the latter sense. Chrysippus may have realised this and – in order not to jeopardise the rigour of the expression, referring to highly formal concepts such as those of void and place – may have used a different one in his second definition. These arguments all rest on the hypothesis that Chrysippus regarded χώρα as an intra-cosmic spatial reality in which there can be no void. I believe that the participles τὸ ἐκ μέρους ἐπεχόμενον (*definiens* of χώρα in the passage from Aëtius), κατά τι κατεχόμενον ὑπὸ σώματος (the positive *definiens* of χώρα in the passage from Sextus), and κατὰ δέ τι ἀκαθεκτούμενον (*scil.* ὑπὸ σώματος: the negative *definiens* of χώρα in the passage from Sextus) are also to be understood in the latter sense.

Let us now return to the passage from Stobaeus. As previously mentioned, in the second definitional statement the expression in question is used to evoke a possibility of a certain kind. To be more precise, in the case of place it evokes a counter-factual possibility that stands in contrast to the actual condition of place: the fact that place is always full, i.e. always wholly occupied, which is its actual situation, is counterbalanced by the possibility of conceiving place as a portion of space that is merely 'occupiable', i.e. without the body occupying it. This interpretation is based on the fact that place is an incorporeal, whereas the existent occupying it is a body. This ontological difference enables one to conceptualise or imagine the former without the latter.

In this case too we are to rule out the possibility that Chrysippus may be using the expression τὸ οἷόν ⟨τε⟩ κατέχεσθαι ὑπὸ ὄντος to suggest that the same place can be occupied by a body other than the one currently occupying it: for place is not pre-existent to the body occupying it, but by subsisting in connection to it, receives its configuration from it.[21]

We may therefore conclude that even the second lexical difference does not introduce any conceptual innovations so relevant as to make the statement in which it occurs a separate definition of place. Rather, this difference may be regarded as an integration, an improvement upon the first definitional statement. Its aim would appear to be that of stressing – if only counter-factually – the incorporeal nature of each place, which appeared to be jeopardised by the strong dependence of each place upon the body occupying it. If I envisage a place as being occupable, this is because I am thinking of it without the body that actually occupies it. But if I can think of a place without the body occupying it, this is

21 *SVF* 2, 507.

because place is not itself a body, but rather an incorporeal. To return to Stobaeus' text, we might even consider translating the ἤ connecting Chrysippus' two statements as 'or rather'.

Place would seem to be the incorporeal[22] manifesting the highest degree of dependence upon the corporeal. Place is always the place of a body.[23] If there were no body occupying a given place, there would be no place as the place of that body. Each body, therefore, has a place, and one only. Place is described as finite by Chrysippus since every body is finite.[24] Each place is also said to be the same size as the body occupying it.[25] This means that a place will be wholly delimited and defined by the body occupying it. If the latter is removed, its place is also removed. If this is the case, we are to imagine that when a body moves, its place also moves with it. This means that wherever a body may find itself or go, it will always be occupying the same place, its own – that delimited by its height, width, and depth. Let us ask ourselves: can a place be occupied by a body other than that which presently occupies it? No, it cannot. For in order to be occupied by another body, it would have to exhibit a degree of ontological independence from the body currently occupying it. But this is not the case. A place does not exist prior to the body occupying it, but only comes about with it, and is removed with it. What does the incorporeality of place consist in? No Stoic answer to this question has reached us. What we do know, however, is that incorporeality coincides with an incapability to do or suffer anything.[26] In what way does place neither act nor suffer anything? To answer this question, let us imagine what would happen if place were a body. If place were a body, it would either put up resistance to the body trying to occupy it, thus leaving it without a place, or would endure the action of the body attempting to oust it. If it were ousted, the place too would be removed, since according to our hypothesis the body in question is the place. Hence in this latter case too the body would have no place. Only by conceiving place as something that neither acts nor suffers anything, can each body have its own place. To claim that every discrete body has its own place – and this must also somehow apply to extended bodies or corporeal masses – is tantamount to claiming that for each body at least a portion of space in the cosmos is set aside, delimited by the body's height, width and depth. If this portion were not incorporeal, this minimum requirement would not be met. If this requirement were not met, there would be no bodies in the cosmos,

22 S.E. *M* 10, 218.
23 *Ibid.*
24 Stob. *Ecl.* 1, 18, 4d.
25 S.E. *M* 10, 3.
26 S.E. *M* 8, 263.

since a body cannot find itself in the cosmos if it is not even allowed to occupy the portion of space delimited by its own height, width and depth.

Let us further examine Stobaeus' text:

> If what can be occupied by an existent is partly occupied and partly unoccupied, the (resulting) whole will be neither void nor place, but another nameless thing (ἐὰν δὲ τοῦ οἵου τε κατέχεσθαι ὑπὸ ὄντος τὶ μὲν κατέχηται, τὶ δὲ μή, τὸ ὅλον ⟨οὔτε⟩ κενὸν ἔσεσθαι οὔτε τόπον, ἕτερον δέ τι οὐκ ὠνομασμένον). For void is thus called by analogy to empty containers, whereas place is thus called by analogy to full containers (τὸ μὲν γὰρ κενὸν τοῖς κενοῖς ἀγγείοις λέγεσθαι παραπλησίως, τὸν δὲ τόπον τοῖς πλήρεσι).

It is worth pointing out right from the start that the hypothetical sentence in the text is a third class condition, used to consider an eventuality. In the protasis, Chrysippus hypothesises the eventuality of a co-presence of void and full in a shared space; in the apodosis, he states what will happen, should the eventuality considered occur. The consequence of this would be a spatial ὅλον that differs from both place and void, and hence has no name.

What follows is intended to explain why the ὅλον stemming from the co-presence of void and full has no name. Let us call this ὅλον 'void', specifying that we are speaking of void by analogy to an empty container: we will find that the term 'void' cannot apply to this ὅλον, since the latter is similar not to an empty container, but rather to a container that is *only partly* empty. Let us then call it a 'place', specifying that we are speaking of place by analogy to a full container: we will find that the term 'place' cannot apply to this ὅλον, since the latter is similar not to a full container, but rather to a container that is *only partially* full. In other words, to claim that this ὅλον has no name is to say that it cannot be designated by the name of one of its parts.

In the light of the fact that Chrysippus referred to the ὅλον stemming from the co-presence of place and void as an eventuality, we can reassess the reason why he claimed this ὅλον to be a nameless thing. Since the latter was simply an eventuality for Chrysippus, by claiming it is nameless he sought not to banish it from his ontology outright, but simply to point out – on the basis of the primacy of the whole over its parts – that if we were to admit such a ὅλον or something of the sort, we could never call it – or rather christen it – with the name of one of its parts. Finally, it is important to note that when thinking of the co-presence of place and void, Chrysippus situated it as an eventuality at the cosmic level.

The following section in the passage under scrutiny concerns Chrysippus' concept of χώρα. This is the most controversial section of the entire passage. It reads:

> χώρα is what is bigger or more extensive and may be occupied by an existent, as a more extensive container for a body or what can contain a more extensive body (χώραν δὲ πότερον τὸ μεῖζον οἷόν ⟨τε⟩ κατέχεσθαι ὑπὸ ὄντος καὶ οἷον μεῖζον ἀγγεῖον σώματος ἢ τὸ χωροῦν μεῖζον σῶμα).

Let me start by saying that the use of the particles πότερον ... ἤ[27] in the text indeed suggests that Chrysippus had two alternative definitions of χώρα in mind. This does not necessarily entail two distinct concepts of χώρα, for it might simply be a sign of uncertainty on Chrysippus' part as to which of the two definitions he should choose. As already mentioned, we cannot rule out the possibility that Chrysippus was reluctant to use the expression τὸ οἷόν ⟨τε⟩ κατέχεσθαι ὑπὸ ὄντος as the *definiens* of χώρα. Indeed, in the latter definition it is replaced by the expression τὸ χωροῦν.

The claim, made in the first definition of χώρα, that the containing space is more extensive than the contained body reflects the way in which perceivers constantly experience the space they access and inhabit in their everyday lives. These portions of intra-cosmic space are perceived as extensions that are never entirely occupied and filled by bodies, which is to say as extensions that are at least partly or predominantly accessible. If this were not the case, the world would simply be inaccessible.

The expression τὸ χωροῦν μεῖζον σῶμα is rather enigmatic. I have opted for the most common reading of its *ordo verborum*.[28] According to this reading, τὸ χωροῦν is a participle noun serving as a nominal predicate and as the predicative complement of the subject (χώρα), whereas μεῖζον σῶμα is the object of τὸ χωροῦν. Μεῖζον is 'bigger' and χωρέω, when used transitively, means precisely 'contain'.[29] From a syntactic point of view, a different reading of the above definition is also possible.[30] However, since my interpretation of the Stoic concept of

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27 Concerning the use of these particles in affirmative statements, see Liddell / Scott 1996[9], s.v. πότερος, -α, -ον, II, 5. See too Algra 1995, 264 n. 6.

28 See Hülser 1987/88, II, 865 (*FDS* II 728); Algra 1995, 264; Sedley 1999, 396; Algra 2003, 23; Dufour 2004, I, 644.

29 Liddell / Scott 1996[9], s.v. χωρέω, III.

30 According to the alternative reading, τό goes with σῶμα, which is a nominal predicate and the predicative complement of the subject, whereas χωροῦν and μεῖζον are two predicates of σῶμα: the former as a conjunct participle, the latter as a comparative. According to this alternative reading, τὸ χωροῦν μεῖζον σῶμα would have to be translated as "the bigger containing body". Now, at first this reading may seem bewildering, since it credits Chrysippus with the thesis that χώρα is a body. The bewilderment, however, ceases once we take the following fact into account. According to the Stoics, four incorporeals subsist: λεκτά, void, place and time. Χώρα is not included in this list, which raises the problem of what its ontological status may be for the Stoics. It would be wrong, or at any rate somewhat rash, to simply assume it belongs to

χώρα is compatible with both, simply as a matter of philological prudence, I prefer to stick to the first reading.

The claim that χώρα is what contains a 'bigger' body, by contrast, immediately raises the question: compared to what is this contained body 'bigger'? This cannot be χώρα itself, which is the portion of space containing the body in question. By definition, χώρα will be 'more extensive' than this body, and in general any body it might be containing. Hence, the only thing compared to which a body might be called 'bigger' is another body. If this is the case, it remains to be determined what Chrysippus was seeking to emphasise by describing χώρα as a portion of space that contains a body bigger than another body.

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the ontological category of the incorporeal, for instance by supposing that the Stoics reduced its occupied part to place and its free part to void. We cannot therefore rule out the possibility that Chrysippus may have addressed the issue of whether it was instead a body. From an ontological perspective, if χώρα belonged to the ontological category of the corporeal, this would account rather well for its status as accessible intra-cosmic space which is constantly experienced by living beings. If, as I believe, Chrysippus used this term to describe vital space, the space that is only partially occupied by animate and inanimate things and which is accessed and experienced by living beings, then this alternative hypothesis must be taken into serious consideration. The accessible intra-cosmic vital space is a space that is perceivable and hence, perhaps, corporeal (my desk, the room it is in, the house of which the room is part, the building in which my flat is located, the block of houses that includes this building and so on: all these portions of space are containing bodies that are partially occupied, partially free). Accessible space is not empty but rather filled with air, which, as a penetrable body, leaves the space it fills accessible and hence free. Stobaeus' account may therefore preserve traces of a doubt of Chrysippus' with regard to the ontological status of χώρα: either this is an incorporeal (as the formula τὸ μεῖζον οἷόν ⟨τε⟩ κατέχεσθαι ὑπὸ ὄντος might also suggest) or it is a body containing other bodies. This hypothesis was first formulated by Brehier 1928[2], 52–53 and criticised by Algra 1995, 274–276. Algra is quite right in arguing (275–276) that Brehier's explanation of why it is possible for larger bodies to contain smaller ones – an explanation based on the Stoic doctrine of integral crasis – leaves much to be desired. Still, I do not share Algra's confidence in assuming that according to Chrysippus and Stoics in general χώρα is an incorporeal (276). One cannot overlook its absence from the canonical Stoic list of the four incorporeals, nor the silence of our sources on the matter. Nor do I agree with the syntactic and grammatical observations on the basis of which Algra rejects the alternative reading of the *ordo verborum* of the expression τὸ χωροῦν μεῖζον σῶμα. Χωροῦν and μεῖζον would not appear to be coordinated and self-standing adjectives that equally and independently contribute to more accurately defining the noun σῶμα (as "three-dimensional" and "heavy", for instance); rather, they appear to be two predicates each of which in combination with the noun helps express a single concept, i.e. that of χώρα. Further evidence for this would also be provided by the morphological differences between the two predicates: the former is a participle, whereas the latter is a comparative. In the first case, Greek would require the two adjectives to be connected by καί or τε καί (see Kühner / Gerth 1898, 277). In the second case, there is "kein Bindewort" (*ibid.*) between the two adjectives (I wish to thank Graziano Ranocchia and Carlos Lévy for their suggestions on the matter).

With this aim in view, I wish to make the following remarks.

Only by taking account of Chrysippus' counter-intuitive conception of place can we understand why he felt the need to introduce an apparently bizarre spatial reality such as χώρα, as it emerges in the definitions we are examining. What I would suggest is that Chrysippus did so in order to make up for the fact that by simply drawing upon his concept of place he could not speak of a portion of space that endures while being occupied by different bodies. As I just mentioned, the existence of portions of space occupied by several bodies is something that meets our gaze at every moment. This explains why, by definition, each χώρα will be bigger than the body it contains. If a χώρα were the same size as the body it contains, it would be identical to the *topos*. The concept of χώρα had to entail the idea of an intra-cosmic portion of space that is always more extensive than the body it contains.[31] This portion will endure and preserve its configuration even if the bodies it contains are removed; for this very reason, it is capable of receiving several bodies. The spatial boundaries of this portion of space are defined by its contiguity with other portions or areas, serving other functions. The notion of such portion of space also entails that of a body – the contained body – that is never the same (as in the case of place), and that may be larger or smaller than the one before or after it, yet never more extensive than the aforementioned portion of space (this distinction is elliptically expressed through the quantitative language of Chrysippus' second formulation: "bigger").

It is possible that Chrysippus believed his two definitions of χώρα to capture both these characteristics. Where he had some doubts, perhaps, was as to which definition most perspicuously expressed these characteristics.

The first definition was possibly the clearest one. Still, it presented the locution οἷόν ⟨τε⟩ κατέχεσθαι ὑπὸ ὄντος, which strictly speaking referred to space as conceived without a body and thus was quite inappropriate to describe an intra-cosmic spatial reality. As previously mentioned, when predicated of an intra-cosmic reality, this expression would have to be understood in a more informal sense, as describing free, unoccupied space: space that is accessible, yet certainly not empty. Chrysippus may have found this informal use of the expression in relation to χώρα inappropriate and misleading. This would help explain why he used the substantival participle τὸ χωροῦν in his second definition. Still, this definition is so elliptical it is baffling. Chrysippus may have liked it because it refers the participle τὸ χωροῦν to an intra-cosmic spatial reality that is only partly accessible. For the reasons just noted, the mention of a μεῖζον body was pos-

31 See Sedley 1999, 396 – 397.

sibly enough for Chrysippus to distinguish χώρα from place and thus ensure its function as a portion of space that endures despite the incessant movement of bodies coming, stopping, and going.

The final section in Stobaeus' testimony concerns Chrysippus' concept of void:

> Void is thus said to be infinite: for such is what lies outside the cosmos (τὸ μὲν οὖν κενὸν ἄπειρον εἶναι λέγεσθαι· τὸ γὰρ ἐκτὸς τοῦ κόσμου τοιοῦτ' εἶναι); place is finite on account of the fact that no body is infinite. Just as the corporeal is finite, so the incorporeal is infinite. Time and void are infinite (τὸν δὲ τόπον πεπερασμένον διὰ τὸ μηδὲν σῶμα ἄπειρον εἶναι. καθάπερ δὲ τὸ σωματικὸν πεπερασμένον εἶναι, οὕτως τὸ ἀσώματον ἄπειρον· ὅ τε γὰρ χρόνος ἄπειρος καὶ τὸ κενόν). Just as nothingness is no limit, so there is no limit of nothingness, as in the case of void (ὥσπερ γὰρ τὸ μηδὲν οὐδέν ἐστι πέρας, οὕτως οὐδὲ τοῦ μηδενός, οἷον ἐστι τὸ κενόν). On the basis of its subsistence, it is infinite, but it becomes limited when it is filled. When what fills it is removed, it is not possible to conceive of a limit for it (κατὰ γὰρ τὴν αὐτοῦ ὑπόστασιν ἄπειρόν ἐστι, περατοῦται δ' αὖ τοῦτο ἐκπληρούμενον· τοῦ δὲ πληροῦντος ἀρθέντος οὐκ ἔστιν αὐτοῦ νοῆσαι πέρας).

The first striking thing in this section is the lack of any definition of void. We also find three conceptual anomalies. The first is the claim that the incorporeal is infinite. This is no doubt true of void and time, but not of place and *lekta*. The claim thus attributes to the whole (the genus of the incorporeal) the characteristic of a part of it (infinity, which is only a prerogative of void and time). The second anomaly consists in the way in which place is described. On the one hand, the passage confirms the close dependence of place upon the corporeal element, but on the other, by pushing this dependence almost to the point of identity, Chrysippus appears to be almost conceiving of place as a body, by contrast to the infinite incorporeal void. The closing part of the section should not be interpreted to mean that according to Chrysippus void becomes place once it is filled. For this to be possible, it would have to be occupied by an infinite body. But no body is infinite. Chrysippus is merely speaking of the delimitation of infinite void caused by the presence of the cosmos within it. This leads us to the third anomaly. The language Chrysippus uses would appear to suggest that void suffers something from the body that fills it and thereby delimits it. The closing statement, moreover, would appear to be setting forth the idea of the ontological independence of the infinite void from the cosmos, and hence, more generally, from the corporeal element.

What I wish to present, however, is a hypothesis that may adequately account at least for the three anomalies just mentioned. As concerns the absence from Arius' fragment of Chrysippus' definition of void, it is difficult to determine whether this is a lacuna or an omission, and in the latter case, whether it is an

omission due to Arius or to his Chrysippean-Stoic source. In either case, however, these difficulties will not prevent us from embracing the second hypothesis.[32]

A likely explanation for the first anomaly, namely Chrysippus' claim that what is incorporeal is infinite, is that what he has in mind is a contrast between the sub-group of the incorporeals consisting of time and void and that particular body represented by the cosmos. Indeed, if there is any body that it would make sense to set in contrast with infinite time and space, this is precisely the body of the cosmos. The place that is being discussed here, then, might well be the place of the cosmos, the incorporeality of which is pushed into the background in order to emphasise the finiteness determined by the body delimiting it. In turn, this would help explain the second anomaly, namely the fact that Chrysippus here appears to be treating place like a body. The causal language which Chrysippus uses to describe the process whereby void is filled by the cosmos would seem to betray a degree of conceptual uncertainty. Still, we should not rule out the possibility that Chrysippus here was merely counter-factually and dialectically playing around – so to speak – with the concepts of void and cosmos (understood as the body filling and delimiting void), in order to find out whether the former might be conceived of as being independent of the latter. Actually, we know that the Stoics described void not as something that is filled and delimited by the cosmos, but rather as something that surrounds the cosmos.[33] Claiming that void surrounds the cosmos is tantamount to saying that void is not pre-existing compared to the cosmos and its *ousia*, but rather subsists with them. This means that it only makes sense to speak of void in relation to something full (the cosmos and its *ousia*). For if the latter is removed, what remains is not void but nothingness. In the light of what has been argued, the lack of any definition of void can also be accounted for by the hypothesis that what the passage from Stobaeus illustrates is precisely the outset of Chrysippus' reflection on this concept – an open-minded and quasi-dialectical reflection that was not yet ready to be developed and encapsulated into a definition.

The fragment from Arius Didymus has preserved and passed down an important part of Chrysippus' contribution to the Stoic physics of space. At the beginning of the present section I claimed that the two other passages, those from Aëtius and Sextus, illustrate the official position of the orthodox Stoa on the matter. This position may largely be traced back to that of Chrysippus, yet cannot be identified with it. Why? Algra has provided a satisfying answer to this question.[34]

32 The first hypothesis is instead upheld by Algra 1995, 271 n. 31.
33 *SVF* 1, 94 and 95.
34 Algra 1995, 266 – 270.

Since the definition of χώρα provided in both passages not only differs, in terms of its formulation, from that of Chrysippus, but is also very similar to the way in which in Arius Didymus' fragment Chrysippus describes the "nameless" ὅλον formed by the co-presence of place and void, the labels οἱ Στωικοί (Sextus) and Ζήνων καὶ οἱ ἀπ' αὐτοῦ (Aëtius)[35] must refer not only to Chrysippus, but also to a considerable and authoritative portion of the Stoic school. What's more, according to Sextus,[36] some people (ἔνιοι) – possibly a minority within the Stoa – took up Chrysippus' second definition of χώρα again, not without a few misunderstandings. While I will attempt to explain how a situation of this kind might have come about, I should also note that it seems very strange that a thesis developed by the founder of Stoic orthodoxy may have been put aside by orthodox Stoics only to be taken up again by a minority of heterodox Stoics.[37]

As concerns the definition of place, a substantial degree of continuity may be observed between the content of Stobaeus' testimony and that of the passages from Sextus and Aëtius. Here I shall limit myself to a couple of observations: 1) both passages provide a definition of place in which no mention is made of the expression τὸ οἷόν ⟨τε⟩ κατέχεσθαι ὑπὸ ὄντος, 2) in the definition of place provided by Sextus we find the expression "[place] is the same as that which occupies it (ἐξισαζόμενον τῷ κατέχοντι αὐτόν)" and it is further specified that the latter is a body.

The definition provided for void probably represents the official position of the school, which in all likelihood may be traced back to Chrysippus. When it comes to this definition, we should ask ourselves why void was conceived as something that can be occupied and yet *de facto* remains unoccupied. Is it correct to say that by expanding at the end of a cosmic cycle the cosmos will ultimately occupy void? The answer must be a negative one. During ἐκπύρωσις the cosmos may expand and expand, yet because it is still limited in its extension it cannot alter the existing conditions, according to which it is surrounded by unlimited void both at the beginning of the cosmic cycle, when it is smaller in size, and at the end of the cycle, when it is huge in size. The Stoic answer to the ques-

35 Algra 1995, 268, and 2003, 19.

36 S.E. *M* 10, 4.

37 Algra 1995, 271ff., and 2003, 22–23, has forgone this interpretative hypothesis. He believes that official Stoicism took up Chrysippus' first definition of χώρα from the point of view of its contents (*ad sententiam*) but not of its form (*qua Worlaut*). Chrysippus' second definition was instead taken up by a minority faction (S.E. *M* 10, 4) – whether belonging to the Stoic school or not, this remains unclear. This new explanation fails to clarify why Chrysippus' second definition of χώρα was rejected by official Stoicism.

tion may be found in two passages, and agrees with what has just been stated. The first passage is none other than fragment 25 from Arius Didymus.[38] The second is a passage from Simplicius' commentary on Aristotle's *Categories*.[39] The reason invoked by the Stoics is that there is no infinite body capable of occupying infinite void. Hence, the definition of void draws a contrast between a possibility intrinsic to the reality of void as an infinite subsisting incorporeal and an impossibility intrinsic to the cosmos as a finite existing corporeal entity.

As already mentioned, both in the passage from Aëtius and in that from Sextus, the definition of χώρα not only differs from the one Arius ascribes to Chrysippus, but would also appear to be based on the letter of Chrysippus' οὐκ ὠνομασμένον. To this we should add the fact that in Sextus' passage mention is made of ἔνιοι who adopted a concept of χώρα very similar in its formulation to the second definition of χώρα ascribed to Chrysippus by Arius.

The process leading to this state of affairs might have been as follows. Most Stoics possibly reacted to Chrysippus' two definitions of χώρα by reasoning: "we have understood what Chrysippus meant to say, but find the way in which he has expressed the concept in the first case clear yet problematic (because of his use of a technical spatial expression such as τὸ οἷόν ⟨τε⟩ κατέχεσθαι ὑπὸ ὄντος) and in the second case informal – as one would expect the definition of a pre-theoretical spatial notion to be – but too obscure. Chrysippus ought to have combined the clarity of the first expression with the informal character of the second one. Would it not be better to redefine the notions of occupied and unoccupied space so as to claim that χώρα is only partially occupied space?" The redefinition in question is the one I have already mentioned. It consists in drawing a distinction between occupied and unoccupied space in the rigorous sense of full and empty space on the one hand, and occupied and unoccupied space in the more informal sense of space that cannot be accessed and space that can on the other. The official position of the Stoic school with regard to χώρα may therefore be interpreted as a return to Chrysippus' notion of οὐκ ὠνομασμένον, based however on a reinterpretation of the expressions "occupied" and "unoccupied". The concept of χώρα that stemmed from this process did not, then, coincide with the idea of a genuine co-presence of full (place) and void.

Even for the majority of Stoics, the concept of χώρα was intended to account for the way in which perceivers in their everyday lives constantly experience intra-cosmic spaces as extensions that are never entirely occupied and filled by bodies. The interpretation I have put forward enables one to explain the proc-

38 Stob. *Ecl.* 1, 18, 4d.
39 *SVF* 2, 535.

ess that took place without having to confine Chrysippus' position to the margins of doctrinal heterodoxy.

As for the ἔνιοι mentioned in the text, we cannot be sure they were Stoics: for we cannot rule out the possibility that they might have been people with a different philosophical orientation. What we can say is that although they sought to remain faithful to the letter of Chrysippus' second formulation, they made the mistake of taking χώρα to be a kind of place, thus misinterpreting the value of the predicate μεῖζον. This may be inferred from the use they made of the predicate ἀξιόλογον to describe the size (μέγεθος) of a body that is contained. The point is not the absolute size of this body, but rather its relative size. For we have seen that a contained body is only said to be "bigger" in relation to other bodies, since it cannot be bigger than the space containing it. Those referred to as ἔνιοι are right in claiming that place is no different in size than the body occupying it, since it is perfectly coextensive with it, whatever its size may be. Yet by erroneously regarding χώρα as sub-species of place, they have been forced to introduce a kind of specific difference, so to speak, namely the ἀξιόλογον μέγεθος of the body that is contained. This is probably where they went wrong.

Before bringing this paper to a close, I wish to briefly return to the "nameless" ὅλον stemming from the co-presence of place and void. According to fragment 25 of Arius Didymus, Chrysippus only regarded this ὅλον as an eventuality. To be more precise, he regarded it as an eventuality inherent in the cosmic order, not the intra-cosmic. If this is the case, the very formulation that the orthodox current of the school drew upon for its definition of χώρα may have provided a clue for Chrysippus himself or one of his disciples to develop a distinction between the whole (ὅλον) and the all (πᾶν).[40] The term ὅλον, which in the Arius Didymus fragment is used to mean "whole" in a pre-philosophical sense, here becomes a predicate of *kosmos*. The union of *kosmos* and void is instead described as τὸ πᾶν. Since the *kosmos*, surrounded by infinite void, is a body, it must certainly also have a place. Hence, what we have is a sort of coexistence of place and void which according to fr. 25 of Arius Didymus Chrysippus merely regarded as a possibility. This coexistence, in agreement with Chrysippus' semantic instructions, came to be very generically referred to as τὸ πᾶν.

40 *SVF* 2, 522–525. See too the relevant comments by Algra 2003, 272 n. 34.

Teun Tieleman

Posidonius on the Void. A Controversial Case of Divergence Revisited

1 Introduction

Like his mentor for some time, Panaetius of Rhodes,[1] the Stoic philosopher Posidonius of Apamea (c. 135 – 51 BC) devoted considerable effort to the physical part of philosophy. He did not limit himself to physical principles but engaged in extensive investigations into more specialized fields such as astronomy, meteorology and geography. Later ancient sources such as the astronomical author Cleomedes turn to him precisely in connection with issues of the more specialized sort.[2] There can be no doubt that Posidonius, at least in his own studies, extended the range of natural philosophy beyond what most of his fellow-Stoics deemed sufficient to underpin the Stoic system with a scientifically respectable view of the natural world. Posidonius' reputation as an 'Aristotelizer'[3] seems most of all to reflect his persistent concern with causal explanation, his characteristic insistence on wanting to know 'why?', where great predecessors such as Chrysippus of Soli (c. 280 – 204 BC) had stopped short.[4] Furthermore, he was more interested than other Stoics in geometry as a tool for sciences such as geography and astronomy.[5] In this connection we may recall the long disquisition from Simplicius' commentary on Aristotle's *Physics* concerning the difference of approach between physics (φυσιολογία) and astronomy, (ultimately) deriving

1 See below, p. 79 n. 44 with text thereto.

2 Diogenes Laërtius (c. AD 200) associates the name of Posidonius with more fundamental issues but Diogenes' work rather reflects an earlier stage of reception, viz. the biographies and handbooks of the Hellenistic period. Galen of Pergamon (AD 129-c. 213) stands out for his extensive dealings with Posidonius' work *On the Emotions* in books 4 and 5 of his *On the Doctrines of Hippocrates and Plato (PHP)*; see Tieleman 2003, ch. 5. See also below, p. 78 n. 40 and text thereto.

3 As indicated by Strabo 2, 3, 8 (= T 85 E.-K.) referring to τὸ Ἀριστοτελίζον as a quality about Posidonius' philosophy-cum-science.

4 Thus in psychology Posidonius appears to have gone further than Chrysippus by insisting on a causal explanation of behavioural phenomena such as weeping or laughing against one's will: cf. Gal. *PHP* 4, 7, esp. 19, 36 – 37 De Lacy (= *SVF* 3, 466, Posid. fr. 165; see T 101 E.-K.).

5 Explicit remarks to this effect are made by Gal. *PHP* 4, 4, 38; 7, 1, 14 De Lacy (T 83 – 84 E.-K) but note that these passages reflect Galen's general tendency to present Posidonius as the scientifically minded Stoic, as opposed to, most notably, Chrysippus.

from Posidonius' *Meteorology*. A degree of caution is advisable, however, since what we are dealing with here are Posidonius' views as reported by Geminus, according to Alexander's account in Simplicius (fr. 18 E.-K.).

Yet the emphasis of our documented evidence on specialized issues should not distract us from the fact that Posidonius also continued the work of his predecessors on fundamental concepts including physical space and related matters. He did so in such works as his *Physical Theory* (Φυσικὸς λόγος) and *On the Cosmos* (Περὶ κόσμου) and possibly in a work entitled *On the Void* (Περὶ κενοῦ), if he ever wrote such a work – a controversial point to which I shall return. In this connection, moreover, we may recall that Posidonius commented on the cosmology set out in the Platonic *Timaeus*, even if we feel no longer confident that this took the form of a formal commentary – the very thought of which was once enough to make scholars salivate.[6] But his interest in Plato need not be called into question and counterbalances the Aristotelian side indicated, as we have just noted, by some of our sources. Receptivity to both Platonic and Aristotelian concepts is taken to be typical of a new phase in the development of the Stoic school, which has been called Middle Stoicism ever since August Schmekel introduced this expression more than a century ago.[7] More recent advances in research suggest that Posidonius was perpetuating what was in fact a long-standing concern among the Stoics with Plato's legacy and in particular the *Timaeus*. This interest on the part of Posidonius and his predecessors may have been motivated in part by special scientific points raised by the *Timaeus* but, it appears, to a greater extent by the moral and theological (viz. providential) dimension of the cosmology presented by Plato.[8]

Nonetheless, extensive arguments by Posidonius dealing with the complex place/space/void have not been preserved. In many cases we just get these book-titles with brief indications of their contents or their main thesis. This also holds good in the case of the physical concepts of place, space and the void, with the exception of a single, intriguing testimony from the doxographer Aëtius (2, 9) concerning Posidonius' divergence from the Stoic school doctrine on

6 This assumption is primarily based upon S.E. *M* 7, 93, printed by Edelstein-Kidd among the fragments with dubious book-titles (fr. 85). In connection with the physiology of sense-perception Sextus here refers to Posidonius as "explicating the *Timaeus* of Plato" (τὸν Πλάτωνος Τίμαιον ἐξηγούμενος). Several more fragments bear out Posidonius' concern with Plato's *Timaeus:* T 28. 31. 49. 141. 149. 205. 291 E.-K. However, Stoics certainly at this time were not much into the commentary genre but integrated the arguments of their predecessors in their own treatises. See further (both cautiously) Kidd *ad loc.* and Reydams-Schils 1999, 85–90.

7 See Schmekel 1892.

8 Betegh 2003; Reydams-Schils 1999, chs. 1 and 2.

the issue of the extra-cosmic void, viz. as being finite rather than infinite. Overall, however, our sources mention Posidonius as representing the Stoic consensus, or, if you like, the Stoic 'orthodoxy' on this subject. Some of this general material may help set the stage for our discussion of Posidonius' position on the void.[9]

2 Place, Space and the Void according to the Early Stoics

What I have to offer in this section partly overlaps with the evidence presented and discussed in the papers contributed to this volume by Jaap Mansfeld and Michele Alessandrelli. I limit myself to presenting two testimonies that seem particularly relevant when it comes to reconstructing the background against which to consider Posidonius' work in this area. The first is Arius Didymus, fragment 25 Diels, from the first book of the *Eclogae* by the 5th century AD compiler Johannes Stobaeus. What Stobaeus has preserved may be considerably older, since he draws upon Arius Didymus, whose work *On the Sects* presented the physics and ethics of the main philosophical sects or schools, Platonism, Aristotelianism and Stoicism, as opposed to the thematic arrangement of doxographical sources such as Aëtius (see below, pp. 72–78).[10] The following account is attributed to the third Stoic scholarch, Chrysippus, in particular. Chrysippus emerges from our textual evidence as a thinker with a more than passing interest in space and related concepts.[11] Thus Arius Didymus fr. 25 Diels (*SVF* 2, 503) tells us:

> (1) [Of Chrysippus] Chrysippus declared place (τόπον) to be that which is fully occupied by being or that which is capable of being occupied by being and is in fact wholly occupied, whether by one thing or by several things.
> (2) If, of that which is capable of being occupied by being, part is occupied and part not, the whole will be neither void (κενόν) nor place but a different something which has no name. For we speak of void on the analogy of empty vessels and of place on the analogy of full

9 For what follows I am much indebted to Algra 1993, an excellent discussion of the textual evidence relevant to this issue.

10 Diels 1879, 82–88, identified Arius with Arius Didymus, court philosopher to the Emperor Augustus, which means that his work is to be dated to the second half of the first century BC. This identification has found wide acceptance but has been called into question by Göransson 1995, 203–218. If we follow Göransson and reject the traditional identification, any date between the middle of the first century BC and the end of the second century AD, perhaps as late as the third century AD becomes possible: see Göransson 1995, 216; Mansfeld / Runia 1997, 238–245.

11 See below, p. 79 n. 47 with text thereto.

> ones.
> (3) Space (χώραν) is either that which is larger and can be occupied by being, like a larger vessel of a body, or that which can contain a larger body.
> (4) The void is said to be infinite (ἄπειρον) for that which is outside the cosmos is such, but place is finite because no body is infinite, so the incorporeal is infinite. Just as the corporeal is finite, so the incorporeal is infinite; for time and the void are infinite. For just as nothing constitutes no limit, so too is there no limit to the nothing, e. g. the void. For by its own nature (ὑπόστασιν) it is infinite; but it is being limited by being filled up; but when that which fills it is taken away, one cannot conceive of its boundary (translation Algra 1995, modified).

A parallel text, Sextus, *M* 10, 3 – 4 (*SVF* 2, 505), supplies the definition of the void which is here left implicit: "The void (τὸ κενόν) is that which is occupied by being but is in fact not occupied".[12] This still leaves further questions open (e. g. that of the relation between sections (2) and (3) in Arius' account) but the main definitions formulated by Chrysippus in terms of corporeality, limit and being and their opposites will, I trust, be clear and should suffice for our consideration of Posidonius.[13]

3 Posidonius on the Void

The first passage I would like to draw attention to is the following:

> Diogenes Laërtius 7, 140 (~ Posidonius fr. 8+6 E.-K. = *SVF* 3 Antipater 43 + 2, 543):[14] ἕνα τὸν κόσμον εἶναι καὶ τοῦτον πεπερασμένον, σχῆμ' ἔχοντα σφαιροειδές· πρὸς γὰρ τὴν κίνησιν ἁρμοδιώτατον τὸ τοιοῦτον, καθά φησι Ποσειδώνιος ἐν τῷ πέμπτῳ Φυσικοῦ λόγου καὶ οἱ

12 Cf. also the concise summary given by Aët. 1, 20, 1 (*SVF* 2, 504): "Zeno and his followers (say) that void, place (and) space differ; thus void is vacancy of body, place what is occupied by a body, space what is partially occupied, as in the case of a jar of wine" (translation Mansfeld / Runia).

13 For a full discussion of these and other related testimonies see Algra 1995, 263 – 281.

14 Cf. *SVF* 1 Apollophanes 404; *SVF* 3 Apollodorus 5. Apollodorus was a pupil of Diogenes of Babylon and so a grand-disciple of Chrysippus (Phld. *Stoic. hist.* col. 51, 7 – 8 Dorandi). Apollophanes is on record as having been a pupil of Aristo (*SVF* 1, 408) and so belongs to the earliest generations of Stoics. Von Arnim aligns D.L. 7, 140 with Aët. 1, 18, 5 and 20, 1 mentioning "Zeno and his successors" (Ζήνων καὶ οἱ ἀπ'αὐτοῦ) also among Zeno's fragments (viz. as *SVF* 1, 95), thereby implying that the doctrines concerned go back to the school's founder. Zeno did write on related matters in his *On the Universe* (Περὶ τοῦ ὅλου): cf. *SVF* 1, 41. 97 (on the unicity of the cosmos), 102 (on generation and destruction of the cosmos); cf. 117 (meteorology), 119 (heavenly bodies). In this type of context, however, the name 'Zeno' often serves to label tenets as Stoic, so the expression Ζήνων καὶ οἱ ἀπ' αὐτοῦ used (only) by Stobaeus here should be treated with due caution (ps.Plutarch gives οἱ Στωικοί).

περὶ Ἀντίπατρον ἐν τοῖς Περὶ κόσμου. ἔξωθεν δὲ αὐτοῦ περικεχυμένον εἶναι τὸ κενὸν ἄπειρον,[15] ὅπερ ἀσώματον εἶναι. ἀσώματον δὲ τὸ οἷόν τε κατέχεσθαι ὑπὸ σωμάτων οὐ κατεχόμενον· ἐν δὲ τῷ κόσμῳ μηδὲν εἶναι κενόν, ἀλλ' ἡνῶσθαι αὐτόν· τοῦτο γὰρ ἀναγκάζειν τὴν τῶν οὐρανίων πρὸς τὰ ἐπίγεια σύμπνοιαν καὶ συντονίαν. φησὶ δὲ περὶ τοῦ κενοῦ Χρύσιππος μὲν ἐν τῷ Περὶ κενοῦ καὶ ἐν τῇ πρώτῃ τῶν Φυσικῶν τεχνῶν καὶ Ἀπολλοφάνης ἐν τῇ Φυσικῇ καὶ Ἀπολλόδωρος καὶ Ποσειδώνιος ἐν δευτέρῳ τοῦ Φυσικοῦ λόγου.

The world is one and finite, with a spherical shape; for such a shape is most suitable for its movement, as Posidonius says in book 5 of his *Physical Discourse* and Antipater in his *On the Cosmos*. And outside it the infinite void stretches, which is incorporeal (and incorporeal is that which being capable of being occupied by bodies is not occupied). The world contains no empty space but forms a united whole, for this results necessarily from the fact that things in heaven and on earth are bound together by one spirit and one tension. Chrysippus discussed the void in his treatise *On Void* and in the first book of his *Physical Sciences*, and so did Apollophanes in his *Physics*, Apollodorus, and Posidonius in his *Physical Theory*, book 2 (transl. Hicks, modified).

This passage comes from a larger section concerned with Stoic cosmology with reference to a plurality of Stoic authorities and their works, including Posidonius (D.L. 7, 138, second half, through 149). In typical fashion Diogenes attributes doctrines or sets of doctrines to a cluster of Stoic works by different authorities. The above passage aligns Posidonius with the founding fathers of the Stoa, Zeno and Chrysippus, and still others, as representatives of the 'official' or 'school' position. In fact, Posidonius is referred to more frequently than other Stoics, with the exception of Chrysippus, who is mentioned just as many times. There is, then, nothing to suggest a divide between what in modern scholarship have come to be called 'Early' and 'Middle' Stoics. In fact, it turns out to be Panaetius of Rhodes, Posidonius' immediate predecessor, who figures here as the dissident voice.[16]

The Diogenes passage offers, in a condensed form, much of what is to be found also in the opening chapter of Cleomedes' roughly contemporary treatise *Heavenly Phenomena* (ΜΕΤΕΩΡΑ, *Caelestia*),[17] parts of which have found their

15 Plu. *Stoic. rep.* 1054b (= *SVF* 2, 549): ὅτι τοῦ κόσμου κενὸν ἐκτὸς ἄπειρόν ἐστι, τὸ δ' ἄπειρον οὔτ' ἀρχὴν οὔτε μέσον οὔτε τελευτὴν ἔχει, πολλάκις ὑπ' αὐτοῦ [*scil.* Chrysippus] λέγεται. Gal. *Pecc. dign.* 5, 102, 2–3 K. (= *SVF* 2, 542): ὁ μὲν γὰρ Στωικὸς οὐκ ἔνδον εἶναί τι κενὸν λέγων, ἔξωθεν δὲ τοῦ κόσμου ὑπάρχειν αὐτό. S.E. *M* 9, 332: οἱ μὲν ἀπὸ τῆς Στοᾶς φιλόσοφοι ... ὑπολαμβάνουσι ... τὸ δὲ πᾶν ἄπειρον (τοιοῦτον γὰρ τὸ ἐκτὸς τοῦ κόσμου κενόν).

16 D.L. 7, 142 (*ad fin.*): Panaetius diverges in holding that the world is indestructible; *ibid.*, 147 (*ad fin.*): Panaetius, unlike the others, denying the reality of divination.

17 Cleomedes has often been dated to the second century AD but there are strong indications that his references to Peripatetic objections against the Stoic theory of the void in the first

way into the same section of *SVF* as the passage from Diogenes.[18] Cleomedes, too, argues that the cosmos cannot contain void in view of its coherence and the cosmic sympathy of its parts towards each other.[19] Likewise, he argues why outside the cosmos there is void, namely to provide space for the expanding fire into which the cosmic mass dissolves according to the Stoic theory of periodic conflagration.[20] This expansion makes it necessary for it to occupy "a place a myriad times greater" (*scil.* than the place occupied by the unexpanded cosmos), which later on is specified as an *infinite* void.[21] This is not spelled out by Diogenes, who has preserved only the determination of the ontological status of the void: being that which is capable of containing a body it is incorporeal itself. This is also to be found in Cleomedes.[22]

In this first chapter Cleomedes, unlike Diogenes, specifies no names of individual Stoics, speaking instead of the "most sophisticated among natural philosophers".[23] But clearly, like Diogenes, he means to present the common Stoic account of the physical principles; the two accounts show several points of contact down to verbal correspondences; they differ only as to the mention of Stoic authorities. But there is no good reason to suppose that this account goes back to Posidonius, let alone presuppose direct access to the latter's work on the part of Cleomedes.[24] It is only in the later parts of book 1 and in book 2 that Cleomedes turns to and explicitly refers to Posidonius for more specialized issues.[25] However, another source testifies to an intriguing point of difference between Posidonius and the rest of his school where the extra-cosmic void is concerned:

> Aët. 2, 9* Περὶ τοῦ ἐκτὸς τοῦ κόσμου, εἰ ἔστι κενόν.
> (1) οἱ μὲν ἀπὸ Πυθαγόρου ἐκτὸς εἶναι τοῦ κόσμου κενόν, εἰς ὃ ἀναπνεῖ ὁ κόσμος καὶ ἐξ οὗ.
> (2) οἱ δὲ Στωικοί [*scil.* ἐκτὸς εἶναι τοῦ κόσμου κενόν], εἰς ὃ κατὰ τὴν ἐκπύρωσιν ἀναλύεται,

chapter of book I presuppose the work of Alexander of Aphrodisias, which would place Cleomedes at least a century later: see Algra 1988, 169–170. An even later date has been proposed in view of the astronomical evidence.

18 *SVF* 2, 534. 537. 540–541. 546.

19 *Cael.* 1, 1, 7 ff.; 68 ff. Todd (*SVF* 2, 534. 546).

20 *Ibid.*, 1, 43 ff. Todd (*SVF* 2, 537).

21 *Ibid.*, 1, 43 ff. Todd; *ibid.* 96 ff. Todd (*SVF* 2, 540).

22 *Ibid.*, 1, 64 ff. Todd (*SVF* 2, 541).

23 *Ibid.*, 1, 43 ff. Todd (*SVF* 2, 537).

24 Similarly Algra 1993, 492–493, with further discussion.

25 The themes covered are climatic zones and the sun's size, distance and eclipses as well as the measurement of the earth: cf. 1, 6, 31–33. 10, 50–52. 11, 65; 2, 1, 68. 79–80. 4, 105. 7, 126 (= T 19. 114–115. 123. 201–202. E.-K.). At *Cael.* 2, 7, 126 Cleomedes acknowledges a large debt to Posidonius as a source of what he has expounded (T 57 E.-K.).

τὸ ἄπειρον.
(3) Ποσειδώνιος οὐκ ἄπειρον [*scil.* τὸ κενόν], ἀλλ' ὅσον αὔταρκες εἰς τὴν διάλυσιν [ἐν τῷ πρώτῳ Περὶ κένου].[26]
(4) Πλάτων Ἀριστοτέλης μήτ' ἐκτὸς τοῦ κόσμου μήτ' ἐντὸς μηδὲν εἶναι κενόν.

(1) Pythagoras and his followers (declare) that a void outside the cosmos exists, into which and from which the cosmos breathes.
(2) The Stoics (declare) that a void outside the cosmos exists, into which it dissolves in the conflagration, the infinite.
(3) Posidonius (declares that it is) not infinite but to the extent that it is sufficient for the dissolution [in the first book of *On the Void*].
(4) Plato and Aristotle (declare that) there is no void either outside the cosmos or inside it.

The reference to the first book of a tract by Posidonius entitled *On the Void* (ἐν τῷ πρώτῳ Περὶ κενοῦ) is given by the MSS. of ps.Plutarch only.[27] It could be a gloss that at some point in the course of transmission found its way into the text, viz. a reference to the chapter entitled Περὶ κένου in the first book (*Plac.* 1, 18). This is why it is deleted by Diels and Mau in their editions.[28] The title *On the Void* is not attested for Posidonius elsewhere. But if such confirmation is not forthcoming from other sources – a single occurrence like this does not rule out the possibility that Posidonius, like Chrysippus before him, wrote a work of the same title, in line with more widespread Stoic practice.[29] No list of Posidonius' works aiming at completeness has been preserved. Given the miserably defective state of our documented evidence (an often underestimated fact), we should perhaps not treat a single occurrence as inherently suspicious.[30] In ps.Plutarch it is not the only reference of this kind.[31] Moreover, even if the title were a gloss, this does not in itself tell against the reliability of the attribution.[32] Nor of course does the fact that, as we have seen, Diogenes Laërtius attributes the Stoic position on the void to another work by Posidonius, viz. the second book of *Physical Theory*.[33]

26 Cf. Posid. fr. 97a = [Plu.] *Plac.* 2, 9, 888a. 897b = Stob. *Ecl.* 1, 18, 4b.
27 On this title see also the extensive discussion in Algra 1993, 478–480.
28 Kidd, however, prints the ps.Plutarch lemma as fr. 84, i.e. among the fragments which explicitly refer to treatises, albeit as a dubious case. In his commentary (vol. 1, 336–337) he argues in favour of accepting the attribution; see further in the text.
29 See Tieleman 2007, 118.
30 For Chrysippus' work see D.L. 7, 140 (= *SVF* 2, 543): see above in the text, p. 73.
31 Cf. 1, 7, 1; 1, 30, 1; 2, 13, 15.
32 As observed by Kidd, vol. 2, 336–7; see Algra 1993, 479.
33 Another possibility is suggested by the fact that individual books of more extensive treatises are also referred to by separate titles. Thus the fourth book of Chrysippus' *On Emotions* was entitled *Therapeutics* (and *Therapeutics and Ethics*) and circulated separately: Gal. *Loc. aff.* 3, 1, 8

The position given by Aëtius to Posidonius cannot be paralleled from other sources. In fact, it sets him apart from the Stoic consensus that the void is infinite reported by Diogenes. But Diogenes may be imprecise on this very point (and after all he only says that Posidonius *spoke about* the void). Nonetheless the silence of other sources on this divergence on Posidonius' part has raised suspicions as to Aëtius' reliability – as does the fact that the view at issue seems an oddity. In fact, it strains credulity.[34] This has even led to attempts to emend the text itself.[35] But there are no good, let alone compelling, reasons to do so. The recorded view did play a part in the *Placita* tradition.[36] Furthermore, we can see how the Posidonian tenet functions in the diaeretic schema[37], which is not untypical of Aëtius and the tradition he represents, as can be seen in Fig. 1.

Moreover, the proposal labelled with Posidonius' name can be seen as constituting a compromise between the two main camps, viz. those who accept and those who reject the vacuum. He retains the Stoic notion of an extra-cosmic void because it is required by another doctrine, viz. that of the periodic conflagration. But by making it finite his resulting position is more similar to the position com-

p. 138 K. (*SVF* 3, 457); *PHP* 4, 5, 10, 13. 5, 2, 21, 30 De Lacy (*SVF* 3, 471); Phld. *Ir.* col. 1, 11–20 Indelli (*SVF* 3, 470) with Tieleman 2003, 140–141. It might be objected that the reference to the *first* book *On the Void* makes this possibility less likely. But this consideration is far from compelling: the two books of Theophrastus' *On the Soul* are also separately cited in this way, while also forming part – as books 4 and 5 – of the larger structure of his *Physics:* cf. Thphr. frs. 307a (esp. p. 54, 20–21); 265 FHSG, with comm.

34 See Reinhardt 1921, 43; Pohlenz 1964, vol. 2, 108; Theiler 1982, 179; Laffranque 1964, 310–311; Kidd 1988, 391–394.

35 In am referring in particular to the proposal made by Kidd 1988, vol. 2, 393 to read καθ' ὅσον instead of ἄλλ' ὅσον: Posidonius said that the void outside the cosmos was not infinite *in so far as* being sufficient for the dissolution". This would 'normalize' Posidonius' position and bring him into line with what appears to have been the school position. But then it becomes difficult to see why Aëtius found a use for it in the first place. See further Algra 1993, who objects to Kidd's proposal as methodologically flawed in that it seeks to reconstruct what Posidonius may have said instead of Aëtius' text.

36 That is to say, two witnesses to that tradition – Achilles *Isag.* 8, *CAR* 38 and Anonymus (dubbed "Anonymus I" by its editor, Maass) *In Aratum*, *CAR* 92–93 – present the tenet concerned as the general Stoic position: see Algra 1993, 485–490. This is no doubt a misattribution but the point at issue here is the presence of the tenet itself in the *Placita* tradition. Likewise, it is found at Aët. 1, 18, where it is given as the Pythagorean-Aristotelian view. This distortion has no doubt occurred under the influence of 2, 9 rather than the other way around: for more discussion see Algra 1993, 484.

37 The use of *diaeresis* as an organizational technique by Aëtius is demonstrated and studied by Mansfeld and Runia in various publications. See e.g. Mansfeld / Runia 2009b, 283–287.

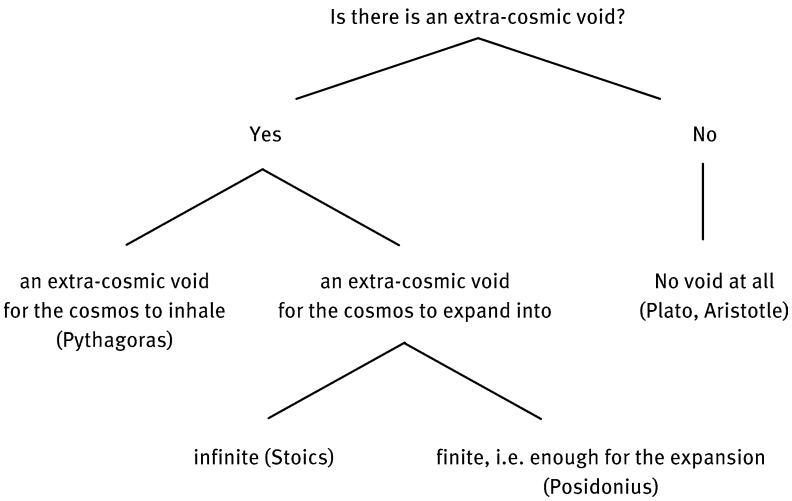

Fig. 1

mon to Plato and Aristotle. Compromise positions of this kind are attested more often in passages deriving from the *Placita* tradition.[38]

All this may serve to show that we should not succumb to the temptation to tamper with Aëtius' text because we feel uncomfortable with the position assigned to Posidonius. But if it is accepted that this is indeed what Aëtius meant to write, it still leaves the question whether he transmits a tenet that had actually been propounded by Posidonius. And if so, how are we to assess it? As a minor adjustment or as a move with far-reaching ramifications?

Anyone familiar with anti-Stoic or, more generally, anti-dogmatic literature knows about its ploy of signalling, inflating or even actively construing cases of disagreement (διαφωνία) between individual Stoics. Some of the issues con-

38 Thus one of the earliest witnesses to this tradition – a verbatim fragment from Chrysippus preserved by Galen, *PHP* 3, 1, 10–15 De Lacy (*SVF* 2, 885) and dealing with the issue of the seat of the governing part of the soul (ἡγεμονικόν), or intellect (cf. Aët. 4, 5) – first presents the two main options in the debate, viz. the encephalocentric and cardiocentric ones, and then gives the Platonic tripartite psychology involving both brain and heart (as well as the belly); see Mansfeld 1990, Tieleman 1996, 154–160. At Aët. 4, 15 ("Whether the embryo is an animal") the Stoic Diogenes of Babylon receives a separate lemma alongside the general Stoic position in a way that does not suggest any dissidence on his part or any sort of compromise but rather a further refinement of the school position; see Tieleman 1991. In other words, he remains firmly within one branch of the dilemma. Such further subdivisions or articulations are also in evidence in other sections (thus in Aët. 4, 5 goes on to specify *parts* of the heart and brain as having been designated by various authorities).

cerned do not strike one as particularly momentous.[39] It is tempting to brush aside testimonies of this sort as uninspiring casuistry. But they do attest to the widespread practice of hunting for real or apparent cases of disagreement among Stoic authorities, including minor ones. Moreover, some of the issues *are* fundamental. A case in point is the disagreement signalled or (as I take it) construed by Galen concerning the structure of the soul. Here Posidonius emerges as a paragon of intellectual integrity who valued truth more highly than the dogmas of his own school and espoused Platonic tripartite psychology.[40] Galen's argument in *PHP* books 4 and 5 had a major impact on how historians perceived the role played by Posidonius in the development of Stoicism, viz. as that of inaugurating, together with his teacher Panaetius, Middle Stoicism, a new phase marked most of all by an increased receptivity to Platonic and Aristotelian concepts. It is perhaps unnecessary to recall that Posidonius even came to be seen as a prime mover behind the course taken by the subsequent Platonist tradition.[41] Today, in spite of continuing differences of interpretation, we are on the whole more sensitive to the fact that the Stoics' concern with Plato's work (e.g. the *Timaeus*) goes back right to the origins of the school and manifests itself in ways both more subtle and profound than had long been assumed. The picture of Panaetius and Posidonius as initiating a more hospitable phase in Stoic dealings with Platonism after a period of disregard or outright rejection is too simplistic.[42] Significant doctrinal adjustments may have been wrongly inferred from the fact that they did refer more frequently and explicitly to Plato, Aristotle and their successors – a practice that may reflect the fact that the Stoa had become an established player on the philosophical stage.[43]

Even so, the divergence ascribed to Posidonius concerning the extra-cosmic void should not be dismissed as a priori implausible. But we do have to tread carefully: after all, it may have started life as a mere suggestion or consideration,

39 So in regard to the question whether virtue, once acquired, can be lost again, the Stoic school position was that it cannot. Yet some of our sources play off Chrysippus against Cleanthes by recording that the former accepted certain exceptions to the rule, as when the Sage comes under the influence of drugs or alcohol: *SVF* 3, 237–241.

40 Gal. *PHP* 4, 4, 38 De Lacy (T 83 E.-K.). 5, 1, 10 De Lacy (T 159 E.-K.). I dissect Galen's treatment of Posidonius in ch. 5 of Tieleman 2003. It is noteworthy that Galen made use of the *Placita* tradition in this debate as he did elsewhere, see Tieleman 2003, 61–64 and 80–88.

41 This approach is associated with the name of Theiler 1930 in particular but of course reflected an, at the time, widely shared impression that Posidonius' impact on later ancient philosophy must have been profound.

42 I have argued for such a revision in Tieleman 2003, ch. 5 (Posidonius), and 2007 (Panaetius). Pertinent observations are also to be found in Sedley 2003, 20–24.

43 See Tieleman 2007, 114, 142.

which later on was treated as a distinctive tenet and set off against the general Stoic position. Later sources such as Diogenes Laërtius and Cleomedes present the Stoic theory of the extra-cosmic void as generally Stoic, without any hint of disagreement, let alone any suggestion that Posidonius' proposal had found acceptance (and Cleomedes in the later parts of his work does refer a lot to Posidonius). In fact (which is exactly what has cast suspicion on the Aëtian lemma) no other sources refer to Posidonius' rejection of the infinite extra-cosmic void. It is interesting to note in this connection that Panaetius is on record as having questioned if not abandoned the doctrine of periodic conflagration.[44] His motivation in doing so has not been preserved and can only be surmised. It may be related to the issue of the infinite extra-cosmic void: does this make cosmic conflagration problematic by allowing the fiery cosmic mass to expand infinitely? But universal conflagration is a striking idea that may have entailed other difficulties. In particular, contrary to its original intention, it may have come to be seen as running counter to the Stoic doctrine of divine providence.[45] But whatever misgivings Panaetius may have had about it, it did not prevent others from perceiving him as a true-blue Stoic.

Posidonius, for his part, while rejecting the notion of an infinite void, replaced it with the rather counter-intuitive one of the finite void with the express aim of saving the conflagration. Here, then, he clearly differs from Panaetius. But in either case the problem may lie with the notion of the infinite void after all. At face value this seems to be supported by an intuition and its articulation in a traditional argument that had been accepted by their predecessors within the Stoic school, viz. the thought experiment of the man at the limits of the cosmos who stretches out his hand.[46] Chrysippus had added his own arguments, viz. that incorporeals such as the void and time must be infinite.[47] But Stoic incorporeals have a 'subsistence' that is derivative from body, i.e. they are a kind of attribute

44 Cf. T. 130 – 135 Alesse. Panaetius may have expressed his doubts in the context of extensive cosmological research. For his work in this field, which belies his later reputation of having been almost exclusively interested in ethics, see Tieleman 2007, 105. In regard to the conflagration his predecessors Zeno of Tarsus and Diogenes of Babylon had also suspended judgement: *SVF* 3 Zeno Tars. 5 and Diog. Bab. 27. See Long 1990; see Sedley 2003, 24 n. 34, who points out that all Stoics remained in agreement on the eternity of the cosmos, taking 'cosmos' as the sum total of all world phases: *SVF* 2, 528. 620.

45 See Mansfeld 1979, 156 – 157.

46 Cf. *SVF* 2, 537.

47 *SVF* 2, 503 (only bodies are limited; incorporeals); 509 – 510. 518 (from his *On the Void*); cf. Algra 1993, 498 – 503, who points to certain problems and tensions in these arguments, suggesting that these may have motivated Posidonius to abandon the notion of an infinite void.

that remains related to the cosmic mass.[48] Thus the infinity of time as an incorporeal is connected with the eternity of the cosmic mass, or God.[49] The infinity of the void, however, may not be without difficulties from a Stoic point of view when considered more carefully. As the Diogenes passage shows (see above, pp. 72–73), the void is defined by reference to its being potentially occupied by body, or bodies, i.e. in the sense of a logical possibility. In the state of conflagration the blazing cosmic mass necessarily involves an expansion as compared to the size of the cosmos in the intervals between conflagrations. Cleomedes, as we have seen, stresses the large extent of the expansion, implying that the void must be infinite (see above, p. 74). But the idea of the cosmic body as stretching out infinitely or at least very far is problematic from a Stoic point of view. Even if in such a stage the unicity of the divine cosmos is maintained, this does not hold good, at least not in a credible way, for its characteristic of being coherent and organic – an idea integral to its divine perfection. This emphasis – expressed by means of the terms σύμπνοιαν and συντονίαν[50] – is even reflected in the report from Diogenes I have quoted (pp. 72–73). If indeed the conflagration is supposed to be the high point in the life of the cosmos (or God), its organic unity should then also reach its peak instead of being put into doubt. The Stoics' fellow-materialists, the Epicureans, were exempt from this problem: for them, our cosmos is but one out of innumerably many. The unique and providentially determined world of the Stoics, however, is the successor to the cosmologies of Plato and Aristotle. These thinkers had seen that their theories were incompatible with the idea of the infinite void: for them, there is nothing outside our cosmos except perhaps for what is better left to metaphysical theology.

4 Conclusion

There are no good reasons to question the report of Aët. 2, 9 in regard to Posidonius' divergence, or perhaps rather adjustment, with respect to the extra-comic void. It may seem striking that it is has left no traces in more sources. In fact, the 'orthodox' line appears to have remained firmly in place, as is witnessed by Cleomedes. But for all we know the crucial lemma in Aëtius may have started

48 See Algra 1993, 499, who points out that some of our sources at the same time define place as what we would call absolute three-dimensional space.

49 Cf. above, p. 79 n. 44.

50 Since a rendering through single words is impossible in English, we translated: "the fact that [the things in heaven and on earth] are bound by one spirit and one tension".

its career as a suggestion actually made in the course of an argument offered by Posidonius in his *On the Void* or elsewhere. But even if it was meant to be more than a suggestion, it is interesting to reflect on how it may have addressed particular tensions inherent in earlier Stoic physical thought. In fact, it appears to have been intended precisely to streamline and so strengthen the Stoic position on the basis of the definitions laid out by the school's founders and Chrysippus in particular. While his immediate predecessor Panaetius appears to have abandoned the notion of cosmic conflagration altogether, Posidonius saved it while at the same time replacing the idea of the infinite with that of the finite extra-cosmic void. This instance of doctrinal streamlining strengthens the conception of the cosmos as divine and providentially determined.*)

***)** I should like to thank the participants in the Capri conference for their comments on my paper. In particular, I am grateful to Jaap Mansfeld for his critical questions and reminders.

David Konstan

Epicurus on the Void

1 Introduction

In this paper, I investigate several aspects of the Epicurean conception of space and its properties. First and foremost, I argue that Epicurus conceived of space as the complement of matter: that is, space is where matter is not. This view is not new: it was articulated, indeed, in the nineteenth century,[1] but the combined authority of Carlo Giussani and Cyril Bailey succeeded in displacing it with another interpretation, according to which space is a continuous matrix that extends uniformly throughout the universe, and is either filled, when it is occupied by matter, or empty, when matter is absent.[2] In a learned and subtle paper, Brad Inwood ably defended the earlier view, and demonstrated, furthermore, that Epicurus was indebted to Aristotle's ideas about space and place, even as he departed from Aristotle in insisting on the reality of void, which Aristotle had denied.[3] However, in an important article that appeared at almost the same time as Inwood's, David Sedley reaffirmed, with new arguments, the view of Giussani and Bailey.[4] Sedley restated his interpretation in the influential collection of fragments of Hellenistic philosophy that he edited together with Anthony Long, and it soon became the new orthodoxy, accepted largely without question by most scholars thereafter.[5] But Sedley's argument was, I believe, not entirely cogent, and I hope to show here, using a somewhat different line of reasoning, that Inwood's interpretation is in fact true to Epicurus' conception.

I wish to thank Francesco Verde for his generous and immensely helpful comments on an earlier draft of this paper.

1 See Teichmüller 1878; also Brieger 1901.

2 Giussani 1896; Bailey 1928, 294–296.

3 Inwood 1981; see 275: "Epicurus had an explicit concept of void; it was not a sort of extension that could be filled or not filled. It was simply an ἀναφὴς φύσις surrounding the distinct, constantly moving atoms. Epicurean physics recognized nothing but body and void as truly existing. Void is accepted as the absence of body, but not, on that account, as the unoccupied part of an extended space". The reader is referred to Inwood's article for additional arguments and bibliography concerning the nature of the void and Epicurus' debt to Aristotle.

4 Sedley 1982; see 188: "Epicurus' 'intangible substance' may have a strong claim to be the first clear recognition of geometrical space as a three-dimensional extension which persists whether or not it is occupied by body".

5 Long / Sedley 1987, 27–31.

Space, according to Epicurus, also had the property of being constituted out of minima; that is to say, minima were not only the smallest and inseparable constituents of atoms but also the smallest conceivable units of motion through the void. I argue that space did not, however, serve the function of separating atoms from each other, as some have supposed, nor is the directionality of the universe (that is, the fact that atoms tend to move downward) due to a property of space itself (it is a consequence rather of the fact that the atoms have weight). Space did, however, on Epicurus' conception, serve as what would later be called an absolute frame of reference, in respect to which atoms move; space changes shape internally but taken as a whole it stands still. Finally, I argue that space was not strictly passive but entered into the constitution of compound bodies, in so far as their density is a function of the relative proportions of matter and void.

2 Bodies and Space

According to the *Placita Philosophorum* ascribed to Plutarch (877d-e), Epicurus maintained that "the principles of existing things are bodies that are observable by reason, without a share of void, ungenerated, eternal, and indestructible" (τὰς ἀρχὰς τῶν ὄντων σώματα λόγῳ θεωρητά, ἀμέτοχα κενοῦ, ἀγένητα, ἀίδια, ἄφθαρτα; cf. Aët. 1, 3, 18, p. 285 Diels = fr. 267 Us.). The atoms cannot be altered or crushed, but "they move in the void and through the void; the void itself is limitless and the atoms are limitless [ἄπειρα]", i.e., in number. The passage adds that "the following three things are attributed to bodies: shape, size, and weight. Democritus mentioned two, size and shape, but Epicurus added a third to these, namely weight. For it is necessary, he said, that bodies move by the blow of weight [τῇ τοῦ βάρους πληγῇ], since otherwise they will not move". I will return to weight later; here, we may note simply that the two attributes of bodies that Epicurus inherited from Democritus (according to this source) would seem to be equally applicable to the void. If this were all that pertained essentially to bodies, then space would appear to be indistinguishable from matter, as Descartes argued in the *Principles of Philosophy* (1644), Part 2, Section 11: After mentally rejecting "all that is not essential to the nature of body", Descartes writes, "we will find that nothing remains in the idea of body, except that it is something extended in length, breadth, and depth; and this something is com-

prised in our idea of space, not only of that which is full of body, but even of what is called void space".[6]

I believe, however, that Epicurus' formula in fact prevents the collapse of body and space into a single substance characterized by extension. For one thing, Epicurus speaks here not of 'body' but of 'bodies': the plural is not applicable to space. Bodies indeed are marked by shape and size, but this pair is not simply reducible to the idea of extension, as Descartes supposed. For Epicurus evidently means that bodies have a specific shape and size: this is what it means to say that "they are not susceptible to being crushed [θραυσθῆναι] or to undergoing formation out of parts or to being transformed [ἀλλοιωθῆναι]". It is true, of course, that bodies are subject to rotation, but their geometrical outline is invariable: a triangular atom cannot become circular. But this is not true of space, at least of space conceived of as the empty region that is unoccupied by atoms, as opposed to the extended matrix in which atoms are presumed to be located, which includes the space they occupy. When atoms move, the space between them is reconfigured: this is enough to discriminate between bodies and space.

It is important to bear in mind that Epicurus does not posit as his two fundamental principles body in the sense of matter and void, but rather bodies and void. This point is sometimes missed or overlooked by commentators. Thus, in their excellent compilation of Hellenistic philosophical texts, Long and Sedley translate Epicurus' *Letter to Herodotus* 39 – 40 as follows: "Moreover, the totality of things is bodies and void [...]. Beyond these [i.e. body and void] nothing can even be thought of".[7] But Epicurus never speaks of 'body' in the sense of matter as such, or what Aristotle called ὕλη; σῶμα in the singular always refers to a particular body.[8] Lucretius, it is true, writes (1, 419 – 423):

> *omnis ut est igitur per se natura duabus*
> *constitit in rebus; nam corpora sunt et inane,*
> *haec in quo sita sunt et qua diversa moventur.*
> *Corpus enim per se communis dedicat esse*
> *sensus.*

6 Descartes 2009, 45.

7 Long / Sedley 1987, vol. 1, 27.

8 Sedley has recently remarked: "Paradoxically, Epicureanism was too materialist a philosophy to need a word for matter" (Sedley 2011, 53); but I suspect their reasons for avoiding so general a term were more immediately relevant to their conception of atoms. I am grateful to Francesco Verde for this reference.

Long and Sedley would seem to be rendering this passage literally when they translate: "The totality of things, then, in so far as it exists *per se*, has a nature made up out of two things: there are bodies, and void in which these are located and through which they move in their various directions. That body exists is declared by universal sensation itself".[9] But I am inclined to think that *corpus* should be taken here to mean 'a body' (and by the way, I would attach *per se* in the Latin to *corpus*, not to *communis sensus*); the meaning is: "Universal sensation affirms that a body exists *per se*". Sensation is not assumed to verify something as abstract as matter (or even atoms, which are beneath the threshold of sensation). This is clear too from the passage in the *Letter to Herodotus* which corresponds to Lucretius' verses (and also, according to a scholium, to what Epicurus stated at the beginning of the *Great Epitome* and in the first book of *On Nature*): "that there are bodies, sensation itself bears witness in all instances" (*Ep. Hdt*. 39: σώματα μὲν γὰρ ὡς ἔστιν, αὐτὴ ἡ αἴσθησις ἐπὶ πάντων μαρτυρεῖ); this is, I think, closer to Epicurus' meaning than Long and Sedley's version: "That bodies exist is universally witnessed by sensation itself".[10]

Lucretius goes on to say (1, 426 – 428):

> *tum porro locus ac spatium, quod inane vocamus,*
> *si nullum foret, haut usquam sita corpora possent*
> *esse neque omnino quoquam diversa meare.*
>
> if place and room, which we call 'void', did not exist, bodies could not be located anywhere, nor have anywhere at all to move to in various directions.

The reference is again to bodies, not to bare corporeal matter. Now, Lucretius' language might suggest that he is including, under the term 'void' (*inane*, which renders κενόν), two different notions: on the one hand, what we might call 'place' (*locus*, which renders τόπος), and, on the other hand, something like 'space proper' (*spatium*). It is tempting to think here of the distinction between space conceived of as a universal matrix, extending uniformly and infinitely in all directions as a limitless substrate, and what we might call empty space, that is, the interstices between bodies. But this runs counter to the corresponding passage in Epicurus' *Letter to Herodotus* (40). To be sure, Long and

9 Long / Sedley 1987, vol. 1, 28.

10 *Ibid*., 27. I imagine that Long and Sedley took Lucretius' *communis sensus* as a gloss on ἐπὶ πάντων, and interpreted Lucretius' *per se* as rendering Epicurus' αὐτή. 'Bodies' here clearly are compounds, not atoms, for the latter are not attested to by αἴσθησις. On the plural σώματα, cf. also *Ep. Pyth*. 86: τὸ πᾶν σώματα καὶ ἀναφὴς φύσις ἐστίν; the manuscripts, however, read σῶμα καὶ ἀναφὴς φύσις, and the plural is due to an emendation by Usener (1887, 36), adopted by Arrighetti and most commentators.

Sedley render the latter passage as follows: "if place, which we call 'void,' 'room', and 'intangible substance,' did not exist, bodies would not have anywhere to be or to move through in the way they are observed to move".[11] But 'place' here derives from a dubious emendation proposed by Usener in the preceding sentence. The text of Diogenes Laërtius is vexed; Arrighetti reads as follows:

> τὸ πᾶν ἐστι ⟨σώματα καὶ κενόν⟩. σώματα μὲν γὰρ ὡς ἔστιν, αὐτὴ ἡ αἴσθησις ἐπὶ πάντων μαρτυρεῖ, καθ' ἣν ἀναγκαῖον τὸ ἄδηλον τῷ λογισμῷ τεκμαίρεσθαι, ὥσπερ προεῖπον τὸ πρόσθεν. 40 εἰ ⟨δὲ⟩ μὴ ἦν ὃ κενὸν καὶ χώραν καὶ ἀναφῆ φύσιν ὀνομάζομεν, οὐκ ἂν εἶχε τὰ σώματα ὅπου ἦν οὐδὲ δι' οὐ ἐκινεῖτο, καθάπερ φαίνεται κινούμενα (D.L. 10, 39, 8 – 40, 4).

The insertion ⟨σώματα καὶ κενόν⟩ goes back to Gassendi, and is surely the most obvious supplement and accepted by a majority of editors. Long and Sedley, however, adopt the emendation of Usener, who supplied ⟨σώματα καὶ τόπος⟩. The motive for this alteration comes at the end of this sentence and the beginning of the next, where Usener reads: ὥσπερ προεῖπον. τόπος δὲ εἰ μὴ ἦν, etc., which Long and Sedley again follow. The correction of τὸ πρόσθεν to τόπος δέ is paleographically clever, but philosophically implausible.[12] Rendering the text that the majority of editors accept gives: "if there did not exist what we call 'void,' 'space' [χώρα here corresponding to Lucretius' *spatium*], and 'intangible nature', bodies would not have anywhere to be or to move through in the way they are observed to move".

Now, in a way the choice between κενόν and τόπος should not matter very much.[13] If, as we are assured by various sources (e. g., Aët. 1, 20, 2), not to mention this very passage in the *Letter to Herodotus*, Epicurus entertained only one notion of void, which is called by various names, then the substitution of *locus* for κενόν in Lucretius' verses would hardly make a difference. There is some evidence, moreover, that Epicurus himself may have used τόπος instead of κενόν in identifying the two elementary principles of nature.[14] Sedley indeed affirms: "I

11 Long / Sedley 1987, vol. 1, 27.

12 For discussion of the entire passage, see Verde 2010, 89 – 93, and Dorandi 2010, 282 – 284.

13 See Algra 1995, 56 n. 73, who adopts Usener's emendation, and remarks: "It does not really matter much whether we opt for the reading of the MSS. or for either of the two proposed conjectures".

14 Sedley 1982, 183, prints ⟨σώματα καὶ κενόν⟩, but he affirms (192 n. 18) that "Usener's ⟨σώματα καὶ τόπος⟩ has had an undeservedly bad press. The same formula occurs at fr. 76 Us. and *Nat*. 34, 14, 7 – 9 Arr. But Gassendi's ⟨σώματα καὶ κενόν⟩ also has good parallels in frs. 74 – 5 Us., in addition to Lucretius' support". Cf. Plu. *Col*. 1112e-f: Ἐπικούρου δὲ λέγοντος "ἡ τῶν ὄντων

understand Epicurus' wording (at *Ep. Hdt*. 40) "'place', which we call 'void', 'room' and 'intangible substance'', as an announcement that he will use its various names indifferently [...]. True to his word, he does elsewhere fluctuate in his usage".[15]

The danger in adopting Usener's emendation derives not so much from the substitution as such as from the associations attaching to the term τόπος, which may – but need not – suggest an extension that is filled with a body, as opposed to empty space, that is, κενόν, as though τόπος and κενόν were, after all, in some fashion distinct. Thus, after rehearsing Aristotle's critique of void, Sedley concludes: "the only available move short of abandoning void altogether is to allow that void does after all remain when a body enters it. But the only way in which it could coexist with a body would be by becoming that body's place. Hence Epicurus has no choice but to follow Aristotle's lead in conflating void with place"[16] – as opposed, that is, to seeing 'place' as a mere synonym for 'void' in the sense of the absence of matter.

To which notion, then, does Epicurus' 'void' correspond – that of the uniform matrix or that of interstitial space, the region between bodies? The answer must, I think, be the latter. Our sources agree that bodies are either situated in space (as Lucretius puts it) or move in and through it (as pseudo-Plutarch has it). To be 'in space' does not mean to be superimposed on an ostensible substratum but to be surrounded by space. Whatever Epicurus may have thought of the Aristotelian definition of place as the inner boundary of the surrounding container (see further below, p. 89), the image he conjures up is that of a stone in water or air: space is circumambient. The testimony of Sextus Empiricus (*M* 10, 2) might seem to tell against this view:

> κατὰ τὸν Ἐπίκουρον τῆς ἀναφοῦς καλουμένης φύσεως τὸ μέν τι ὀνομάζεται κενόν, τὸ δὲ τόπος, τὸ δὲ χώρα, μεταλαμβανομένων κατὰ διαφόρους ἐπιβολὰς τῶν ὀνομάτων, ἐπείπερ ἡ αὐτὴ φύσις ἔρημος μὲν καθεστηκυῖα παντὸς σώματος κενὸν προσαγορεύεται, καταλαμβανομένη δὲ ὑπὸ σώματος τόπος καλεῖται, χωρούντων δὲ δι' αὐτῆς σωμάτων χώρα γίνεται. κοινῶς μέντοι φύσις ἀναφὴς εἴρηται παρὰ τῷ Ἐπικούρῳ διὰ τὸ ἐστερῆσθαι τῆς κατὰ ἀντίβασιν ἁφῆς.

Sextus is asserting here that what Epicurus calls "the intangible nature" is "dubbed κενόν, τόπος, and χώρα" in accord with different perspectives or mental attention (διαφόρους ἐπιβολάς):

φύσις σώματά ἐστι καὶ τόπος"; the passage from the Περὶ φύσεως reads: οὐδὲ διανοηθῆναι ἄλ[λ]α δύναται παρὲκ τούτ[τ]ων, ἄν τε σώματα [θῶ]μεν ἄν τε κα[ὶ] τὸν τ[όπο]ν πρὸς ἀναλογί[αν].

15 Sedley 1982, 188.

16 *Ibid*., 187.

> for the same nature, when it is in a state of being empty of all body, is labelled κενόν, but when it is occupied [καταλαμβανομένη] by a body is called τόπος, and when bodies are moving [χωρούντων] through it becomes χώρα. But it is collectively spoken of as 'intangible nature' by Epicurus because it is deprived of touch in the sense of resistance [τῆς κατὰ ἀντίβασιν ἁφῆς].[17]

Sedley, who calls special attention to this passage, comments:

> Epicurus invents the technical expression 'intangible substance' for space in its broadest sense, whether occupied or unoccupied. He then explains the familiar words 'void,' 'place' and 'room' as being merely the terms by which we refer to it in specific contexts: 'void' when it is unoccupied, 'place' when it is occupied, and 'room' when bodies move through it.[18]

Now, there is no evidence that Epicurus ever used καταλαμβάνω in the sense of 'occupy'; moreover, he does not typically use τόπος in the sense of 'location' but rather in the sense of 'locale,' 'spot,' or 'site'[19]. Thus, a body may arrive simultaneously at many places (ἐπὶ τοὺς πλείους τόπους, *Ep. Hdt.* 47), or again in reference to a point of departure (ἐξ οὗ ἂν ... τόπου, *ibid.*). Again, he speaks of objects arriving at places above our heads (τοὺς ὑπὲρ κεφαλῆς ἡμῶν τόπους ἀφικνῆται, 60) or of atoms being borne toward a spot (ἐφ' ἕνα τόπον φέρεσθαι) inside a compound (62), or more prosaically, of places where different peoples dwell (ἡ παρὰ τοὺς τόπους τῶν ἐθνῶν διαφορά, 75). A place is something to be left behind or reached; Epicurus does not use the term to indicate where a thing happens to be.[20] Thus, Sextus' clever paradoxes (*M* 10, 20 – 23) about what happens to space when an object comes to occupy it do not necessarily controvert Epicurus' conception. Space, in the sense of void, simply changes its configuration when bodies move within it; it is always and only where bodies are not.

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17 Sextus' testimony cannot be entirely reconciled with what we find in Epicurus, I think; see Verde 2010, 96 – 97. My guess is that Sextus (or his source) has made use of Stoic vocabulary to express the Epicurean position, and that this has led to some confusion; so Inwood 1981, 280 – 81. Cf. Aët. 1, 20, on χώρα, with text, translation, and comments by Jaap Mansfeld in this volume, esp. pp. 188 – 190. Mansfeld arrives by a different route, namely a close analysis of the doxographical tradition, at much the same conclusion as I do concerning Epicurus' view.

18 Sedley 1982, 188.

19 Francesco Verde points out to me that Aristotle (*Phys.* 4, 214b17 – 28) had already excluded the possibility that the void could be a place; cf. Simp. *Ph.* 648, 11 ff. Diels = fr. 274 Us..

20 Philodemus speaks of the τόποι "where the gods are" (*D.* 3, col. 8, 12 – 13), but this is in reference to their location in the *intermundia*, not to place in the technical sense of the surrounding container or the like; see Holger Essler's chapter in this volume, esp. pp. 103 and 108.

I must depart also, and for the same reason, from Keimpe Algra's interpretation of Epicurus' position: "there is really only one kind of spatial extension (ἀναφὴς φύσις), which is strictly speaking only to be called void, when it is unoccupied. As soon as such a void is occupied by a body, it ceases *ipso facto* to be void in that strict sense and becomes the place (τόπος) of the body".[21] Algra has to concede that "This is not to say that Epicurus remained faithful to his own conceptual distinctions in practice";[22] thus, in *Ep. Hdt.* 44, where Epicurus speaks of the void as separating atoms, κενόν means, as Algra observes, 'unoccupied space' and so too at *Ep. Pyth.* 89, where Epicurus speaks of "a region with many void spaces".[23] Algra does, however, offer another passage in support of his view that more than one type of void is at least implicit in Epicurus' treatment, namely *Ep. Hdt.* 41–42, where Epicurus argues for the infinite extent of the universe ("if the void were finite, the infinite bodies would not have anywhere to be").[24] Algra comments: "The wording leaves no room for doubt; the conception of void here used is ... that *in which* bodies are and *through which* they move, i.e. space *tout court*" since "Epicurus did not mean to argue that there is an infinite amount of *empty* space".[25] A look at the larger context in which Epicurus makes this statement, however, suggests that Epicurus was indeed maintaining that empty space, that is, the κενόν, is infinitely extended:

> ἀλλὰ μὴν καὶ τὸ πᾶν ἄπειρόν ἐστι· τὸ γὰρ πεπερασμένον ἄκρον ἔχει· τὸ δὲ ἄκρον παρ' ἕτερόν τι θεωρεῖται· ⟨ἀλλὰ μὴν τὸ πᾶν οὐ παρ' ἕτερόν τι θεωρεῖται·⟩ ὥστε οὐκ ἔχον ἄκρον πέρας οὐκ ἔχει· πέρας δὲ οὐκ ἔχον ἄπειρον ἂν εἴη καὶ οὐ πεπερασμένον. καὶ μὴν καὶ τῷ πλήθει τῶν σωμάτων ἄπειρόν ἐστι τὸ πᾶν καὶ τῷ μεγέθει τοῦ κενοῦ· εἴ τε γὰρ ἦν τὸ κενὸν ἄπειρον, τὰ δὲ σώματα ὡρισμένα, οὐθαμοῦ ἂν ἔμενε τὰ σώματα, ἀλλ' ἐφέρετο κατὰ τὸ ἄπειρον κενὸν διεσπαρμένα, οὐκ ἔχοντα τὰ ὑπερείδοντα καὶ στέλλοντα κατὰ τὰς ἀνακοπάς· εἴ τε τὸ κενὸν ἦν ὡρισμένον, οὐκ ἂν εἶχε τὰ ἄπειρα σώματα ὅπου ἐνέστη (41, 6–42, 5).

The initial proposition is that the whole (that is, τὸ πᾶν) is infinite, since it has no limit (πέρας). Within the whole, bodies are infinite in number and void is in-

21 Algra 1995, 55. See Pyle 1995, 68, who ascribes to the Epicureans "the notion of an all-embracing 3D 'intangible nature,' parts of which are occupied by bodies (and are therefore called 'places'), and parts of which are empty (and may therefore be called 'void')"; O'Keefe 2010, 21: "if a body did not get in the way when another body tried to move into the space it was occupying – if it simply were to give way without resistance – it would not be a corporeal body at all, but simply void". The distinction between body and space is correct, but the notion that bodies occupy space, as opposed to being surrounded by it, is misleading.

22 Algra 1995, 55.

23 Cited on p. 56.

24 Cited on p. 57.

25 *Ibid.*

finite in extension. Bodies and void are complementary constituents of the whole. Both must be infinite (in different respects), since if the void were infinite in extension but bodies finite in number, bodies would be scattered throughout the infinitely extended void and hence could not collide and form compounds, as we see they do. If, in turn, the void were bounded, then the infinite bodies would not have anywhere within which they could stand (ἐνέστη: note the prefix), so as to be surrounded by space – as they must be if there is to be motion at all. The proportion of bodies and void changes as bodies enter or depart from any bounded region: add more bodies and the quantity of void diminishes. Epicurus' point is that the void cannot shrink to zero, as it would have to if void were limited but bodies infinite in number, since bodies are always in, and separated by, void.

So far, I have been considering the Epicurean conception of space in purely geometrical terms: space is extended, and at any given moment may be said to have shape and size (the latter being infinite), but the shape changes as bodies move through it. Thus, the motion of bodies in space is in fact crucial to defining space itself: if bodies did not move, space might well be regarded as a single, huge body – though even in this case, it would differ from bodies in that bodies are bounded, and space is not; to put it differently, bodies are in space, but space is not in bodies. The distinction may be made clearer by observing that one can theoretically draw a line from any point in space to any other, without traversing the boundary of a body; the reverse, however, is not the case: one cannot draw a line from the inside of one body to the inside of another without crossing their boundaries. Space is continuous (I am assuming that atoms cannot coalesce to form a solid container around a portion of void; atoms continually collide with each other in compounds, careening in various directions, and do not form a solid phalanx).[26]

Epicurus did, however, have something more to say about the nature of space, namely, that it is, in contrast to body, intangible. This is what permits bodies to move through it; when they encounter other bodies, they are blocked, since they cannot penetrate them (at the microscopic level, atoms must move off in some other direction, since they cannot stand still in Epicurean theory but move continually at a very fast and uniform speed). The intangibility of space means simply that space offers no resistance to bodies in motion, whereas bodies do. Sextus is quite right to define touch in relation to resistance or ἀντίβασις,

26 Francesco Verde points out to me that the Epicurean conception of continuity is not that of Aristotle but rather conforms to the commonplace notion of uninterrupted; see Verde 2011, 63 n. 99.

although this term is not found, I think, in Epicurus himself. It is not just that space permits motion, as Epicurus argued, as against the Aristotelian supposition of a kind of sliding interchange of places in a plenum, though this is of course a crucial part of Epicurus' argument for the existence of void; put the other way around, the fact of motion is the condition for the concept of void. Motion is just the rearrangement of positions, in which the shape and size of bodies are invariant whereas the contours of space are altered. The intangibility of space is Epicurus' name for its susceptibility to such alteration, just as the tangibility of bodies is manifested in their resistance to any form of change, save that of position.

It is natural today to contrast the Atomists' view of space sharply with that of Aristotle: for Aristotle, writing in the tradition of Plato and going back ultimately to radical insights of Parmenides, a void was tantamount to nothingness, and nothing, by definition, does not exist; hence, there can be no void, and the universe is a plenum (Aristotle of course advances special arguments of his own to support this conclusion, such as the absence of natural places in a void, the necessity that objects move at an infinite velocity in a void, and so forth). But rather than reject the reality of motion altogether, in the manner of the Eleatics, Aristotle argued that motion is possible even in a universe full of matter, since objects could slip by each other as we all do in the surrounding air.[27] Inwood cites Aristotle's *Physics* (216bl7–20): "For air is something real, but does not seem so – neither would water, if fish were made of iron. For touch provides the test for what is tangible".[28] And Inwood adds: "Fish moving through water could, if the proportions were right, find fluid water to be as void-like as we find air. This recalls Lucretius' use of the fish example. If the analogy is extended from water to air to an ideal fluid yielding to atoms, which are perfectly solid bodies ..., then motion in a void is conceivable by empirical analogy".[29] Thus, Epicurus made good Democritus' failure to explain just how motion was possible in a void: "This yielding, identical to void's lack of resistance and intangibility ..., was conceived as analogous to the yielding of fluids to objects on the phenomenal level. The problems raised by ἀντιπερίστασις on the phenomenal level do not arise for the ideal fluid, void".[30]

To conclude: it is not the case that Epicurus coined "the technical expression 'intangible substance' for space in its broadest sense, whether occupied or unoccupied", as Sedley has it; space is never occupied, but is simply the complement

27 For a discussion of Aristotle's views on motion and void, see also Lang 1998, 122–129.
28 Inwood 1981, 279.
29 *Ibid.*
30 *Ibid.*

of atoms, existing where they are not. The point seems to be expressed with exemplary clarity by Lucretius (1, 503 – 510):

> *Principio quoniam duplex natura duarum*
> *dissimilis rerum longe constare repertast,*
> *corporis atque loci, res in quo quaeque geruntur,*
> *esse utramque sibi per se puramque necessest.*
> *Nam qua cumque vacat spatium, quod inane vocamus,*
> *corpus ea non est; qua porro cumque tenet se*
> *corpus, ea vacuum nequaquam constat inane.*
> *Sunt igitur solida ac sine inani corpora prima.*[31]

It was radical enough on Epicurus' part to have posited as an elementary principle of nature an entity that has no resistance, and whose property it is simply not to impede the movement of bodies – call it what you will. This is what he needed to counter Aristotle's objections. From the vantage point of modern physics, it may seem almost inconceivable that an Atomist did not take the extra step of envisaging the void as a universally extended and unchanging substratum that was either occupied by matter or empty. But Epicurus was not thinking of matter versus void but of bodies as opposed to the absence of bodies, and his conception of space conforms perfectly well to this vision.

3 Minima

We have now established what we may call the moving geometry of space, but there is still more to be said about its structure at the microscopic level. As I have mentioned, Epicurus held that atoms, the smallest bodies which are inalterable because they possess no admixture of space, all move at an equal speed through the void (the doctrine of ἰσοτάχεια; the abstract noun is found first in Simp. *Ph*. 10, 1019, 23); when atoms are entangled in groups, they vibrate in the confined spaces with no loss of velocity.[32] The reason for this uniform mo-

31 I am afraid that in this respect I must disagree with the argument of Carlos Lévy (in this volume, pp. 136 – 137), who posits a distinction between *locus* and *spatium*, according to which *spatium* is 'filled' but *locus* is 'occupied'.

32 Francesco Verde suggests that Epicurus provided two justifications for the equal speed of atoms: one is that they move through space without resistance (*Ep. Hdt*. 61), the other due to the fact that space is composed of partless minima (Simp. *Ph*. 938, 17 = fr. 277 Us.; see Verde 2010, 179 ff.). I think that Epicurus, in the *Letter*, is thinking of the high velocity with which atoms travel over substantial distances; when they are bound in compounds, atoms still move at the same speed, but with a vibratory motion, since they are trapped in a relatively small compass.

tion of atoms has to do, I believe, with the doctrine of minimal parts: atoms proceed at a rate of one minimum of space per minimum of time. I realize that there is some controversy over whether Epicurus himself expounded the thesis of spatial and temporal minima, and if so, just when in his career; however, there can be no doubt that later writers, including Sextus Empiricus, regarded the granular or quantum nature of space and time as a feature of Epicurean physics, and I see no good reason to suppose that it was a later development. This is not to say that space is composed of minima, any more than atoms are: there are no free-standing minima, and if there were they could not be assembled into a continuous interval, since they have no parts and would, if placed adjacent to one another, wholly overlap in the way that Aristotle demonstrated must be the case for mathematical points. But motion in space is saltatory, as Simplicius makes clear[33] and as the conundrum posed to Epicureanism by Sextus (*M* 10, 144 – 147) presupposes. Sextus invites his readers to think of two atoms separated from each other by nine minima, and heading straight at one another at identical velocities, in accord with ἰσοτάχεια. After one temporal minimum, he observes, they will be seven spatial minima apart: Sextus clearly assumes that atoms travel exactly one minimum of space per minimum of time. In successive temporal instants, the atoms will be five minima, three minima, and finally just one spatial minimum from one another. And here is the puzzle: the atoms cannot meet in the middle of the minimum, because minima are partless; nor can one atom cross the minimum while the other stands still, since this would violate the principle of ἰσοτάχεια. As a result, the atoms cannot meet or rebound as the result of a collision. Now, I believe both that this puzzle must have had some basis in the Epicurean theory of minima, and that the Epicureans in fact had an answer to it. What this answer was is beyond the scope of this paper; suffice it to say that Epicurean minima are infinitesimals – the inverse, I maintain, of the magnitude that Epicurus called "incomprehensible but not strictly infinite" – and with infinitesimals it makes no sense to speak of an odd or even number of them, any more than with incomprehensibly large quantities.[34] For present purposes, the salient point is that spatial intervals, like those within an atom, are not continuous but quantized. This must be a property of the void, if Sextus' puzzle is to make any sense.

33 Cf. also Them. *Phys.* 184, 9 – 28 (fr. 278 Us).

34 I develop this argument in Konstan 2014; see also Konstan 1987.

4 Does Space Separate Atoms?

So far, we have observed that space is rearranged as atoms move in it, and that it is granular in structure, in this respect like bodies. But does space have a more active role to play in Epicurean physics, apart from being where bodies are not? One possible function is that of keeping atomic bodies separate, so that they do not fuse with one another upon contact. The idea was proposed for Democritus, at all events, by Philoponus, in his commentary on Aristotle's *De generatione et corruptione:* "Democritus did not speak precisely of contact when he said that the atoms are in contact with one another [...] but rather what he called contact was the atoms being near one another and not standing very far apart" (1, 8, p. 158 = frr. 236 – 237 Luria). Salomo Luria[35] was persuaded that this was in fact Democritus' view, and it has recently been adopted by Charles Taylor in his commentary on Democritus. Taylor writes: "Hence what appears to be impact [between atoms] is in fact action at an extremely short distance; rather than actually banging into one another, atoms have to be conceived as repelling one another by some sort of force transmitted through the void".[36] There is, however, no evidence whatsoever for appeal to such a force by Democritus or any other Atomist, and whatever the basis for Philoponus' statement, it cannot be this.[37] In discussing the oscillatory motion of atoms trapped in compounds, Epicurus remarks: "For the nature of the void which delimits [διορίζουσα] each atom provides this [i. e., the possibility of moving], since it is unable to offer resistance [ὑπέρεισις]; and the solidity which belongs to them makes the rebound in the case of collision [σύγκρουσις], to whatever distance the entanglement allows the separation from the collision" (*Ep. Hdt.* 44). Space indeed surrounds any atom and enables it to move, up until it makes contact with another, at which point it takes off in some other, unblocked direction; but there is no suggestion that an interval of space, however small, continues to mark off the atoms as they meet, and thereby prevents full contact. We can, however, make a guess at the problem that Philoponus' proposition was intended to solve. If elementary bodies are nothing more than bounded shapes, then when two of them abut over some extended surface, in what way do they differ from a single body with the outline of the two combined? Why don't they fuse? Various answers have been proposed, for example that atoms are by definition inalterable in shape,

35 Luria 1970, 154 – 56.

36 Taylor 1999, 187.

37 For a critique of Taylor, see Konstan 2000.

or that contact occurs only at an unextended point.[38] I myself think that the doctrine of minima served to provide atoms with an edge, an outer layer of minima inseparable from each atom, and these edges preserve the integrity of atoms that are in contact. However this may be, there is no need to ascribe to space the function of preventing the fusion of adjacent atoms.

5 Does Space Have Direction?

Within the infinitely extended Epicurean universe, atoms are said to fall. If they are to fall, as opposed simply to moving randomly, it follows that there must be some privileged direction that is understood to be down. Epicurus' universe thus has orientation. Does space somehow produce this directionality, and can 'down' in some sense be a quality inherent in space? Even though infinite space clearly has no bottom, is it somehow characterized by 'downwardness' and, presumably, 'upwardness'? How do atoms know which way to fall? In my view, the tendency for atoms to fall is a property, not of some presumed orientation intrinsic to space, but rather of atoms themselves: it is precisely a function of weight, which, we are told, Epicurus added to shape and size as an essential characteristic of bodies.[39] Now, it is obvious that not all atoms are at all times moving at uniform speed in a single direction – a kind of rain of atoms – since, as Lucretius pointed out, this would mean that there would be no collisions and hence no interactions among atoms; atoms would instead be motionless with respect to one another. Atoms evidently have some inherent tendency toward movement in a privileged direction, which they manifest without ever slowing down. How they accomplish this is not entirely clear: perhaps they start to slope a bit in the course of their flight, or else, as I have proposed, they tend to emerge from collisions asymmetrically, favouring a particular direction which is by definition down.[40] I take this to be implied in pseudo-Plutarch's statement about "the blow of weight", though this phrase may be interpreted in other ways. However it may work, the point here is that the directionality of the all is a consequence of a property inherent in bodies, not in space.

38 See Bodnár 1998; Hasper 1999.

39 See Inwood 1981, 283, for the role of weight as a response to Aristotle's arguments concerning natural place.

40 See Konstan 1979.

6 Does Space Provide an Absolute Frame of Reference?

If atoms do fall, then in respect to what do they do so? If we imagine a situation in which atoms are all falling in parallel – which is conceivably the long-term result of the effect of weight in atoms, prevented only by the swerve that shifts their alignment and restarts the sequence of collisions – then with respect to each other, as I have said, they are not moving; so what is the difference between their all moving uniformly and their not moving at all? With respect to what immobile frame of reference can the atoms be said to be in motion? I raise the question, which of course has become particularly salient in modern relativity theory, in order to consider whether Epicurus may not have thought of space as somehow unmoving, and that even if there were but a single atom in the universe, it could be said to move, or to be still, with respect to the stationary medium in which it travels.[41] With but one atom, or several atoms moving in parallel, one could as well speak of space moving up as of atoms moving down. But if, as I have been arguing, space is characterized by its changing contours as bodies move through it, then the effect of such complex motions on space cannot be described as a simple linear shift. It is more economical to take space as a whole to be stationary and ascribe motion to atoms, and this was plainly the way Epicurus regarded it.

7 Space and Density

There is one more possible function for space in Epicurean physics, and this has to do with the density of compound objects. David Sedley maintained that space did not have this active capacity. "Body and space are in some sense joint constituents of the world", he allowed, "yet many parts of space are completely occupied by body".[42] Nevertheless, according to Sedley, "Epicurus was perfectly well aware that void as he conceived it was of a very different order of being from body. He resisted the temptation to follow Leucippus and Democritus in calling it an element, and used that name for atoms alone (*Ep. Pyth.* 86). He never makes the mistake of regarding a compound body as made out of atoms

41 The great Swiss mathematician Leonhard Euler had maintained that the idea of absolute motion and rest required the notion of space as an absolute container: see Euler 1748; also Jammer 1993, 129 – 131.

42 Sedley 1982, 190.

and void in combination", in contrast to the early Atomists, who maintained, on Sedley's view, that the void was "a substance housed in space"; thus, the void "could presumably be an element of a compound body and move around with it; but once Epicurus had identified void with place, it became stationary and no longer available as an element of movable compound bodies".[43] Sedley concluded: "Compound bodies consist of atoms variously spaced out. Space provides the location of these atoms, the intervals between them, and room for them to move; but it is not itself part of the compounds".[44] Though I differ with Sedley in that I do not believe that space is ever "occupied by body" but is rather just where body is not, the question remains whether Epicurus conceived of space as a part of compounds, along with the atomic constituents. Some compounds are lighter than others, and this is because the sum of the volumes of the atomic components in a given volume in the lighter compound is less than that in an equivalent volume of the heavier compound. One could express this by saying that the ratio of matter to space is greater in the heavier compound, and that density is a function of the proportion of the collective atomic volume to space. Put this way, it might appear that space enters into the formula for density as a constituent principle, as it were, a co-cause of density (density, as Epicurus knew, does not make a compound fall more swiftly, but is crucial to the phenomenon of *ekthlipsis* or extrusion: denser objects displace more rarefied ones, driving them back with respect to the direction of motion, which will be up when the primary direction happens, as it commonly does, to be down). I see no way of eliminating reference to space in defining or describing the density of a compound, nor any need to do so: the relation between bodies and void, whether in terms of the positions and movements of the bodies in the void or their total volume in relation to that of void, is what constitutes the Epicurean universe. Space and bodies are complementary.[45]

43 *Ibid*. Epicurus' use of the term *stoicheia* here has seemed exceptional, and has been a motive for casting doubt on the authenticity of the *Letter to Pythocles*. However, Jaap Mansfeld (1994, 29 – 47) has argued that here "for once Epicurus used *stoicheia* in a Peripatetic sense", referring in this connection to Theophrastus' *Physics*, fr. 8 Diels, cited in Simp. *Ph.* 28, 8 – 9.

44 Sedley 1982, 190 – 191.

45 Francesco Verde points out to me that Epicurus refers to void as a *physis* (*Ep. Hdt*. 44), and as such it should have a role in the composition of aggregate bodies.

8 Conclusion

Kosmoi are local regions where atoms are particularly numerous in relation to space and sufficiently entangled to create a kind of integument, so that atomic collisions in a confined space are frequent. Outside of *kosmoi*, atoms are fewer and can move over great distances relatively unimpeded, and so their average velocity over such distances approaches or is equal to the natural speed of atoms, which is very great (as swift as thought, as Epicurus puts it). It must be emphasized, however, that atoms do not move more slowly within *kosmoi* or compounds; if their linear motion is restricted by other atoms, they vibrate back and forth and so the overall progress of the compound in any given direction may be zero. This is the phenomenon that Lucretius illustrated with his image of a flock sheep on a distant hillside, which appears still even though the animals are individually in motion.

To conclude: Epicurean space is complementary to body, and exists where body is not. Bodies move through space, not as an immobile medium, but rather in the sense that space shifts its contours as bodies move. This characteristic of space is what Epicurus dubs its intangibility or failure to resist, as opposed to the tangibility of bodies: bodies are inalterable in shape, space is not. Space is infinitely extended, and although there is directionality in the universe (down versus up), this is not a property of space but rather of bodies, a function of the quality that Epicurus defined as weight. The relative quantity of space and bodies (taken as volumes) constitutes the density of compounds, and in this sense space may be said to contribute to the properties of objects. Space is empty – it is never filled or occupied – but it can be measured: it is three-dimensional, and the distance between bodies may be calculated in terms of the extent of space between them. Like any extended entity, there are greater and smaller stretches of it. Globally, its magnitude is infinite: there is no upper limit. But there is a lower limit to extension, which is the minimum known to thought that Epicurus stipulated as irreducible but not equal to zero, that is, not point sized. My own guess is that it is what Epicurus would call incomprehensibly small, in the sense that it requires an incomprehensibly large but not strictly infinite number of them to make up any finite length. Space thus has minimum parts in the same sense that bodies do, and the equal speed or ἰσοτάχεια at which atoms move is precisely one minimum of space per minimum of time. Sextus' puzzle depends on this conception, and I see no reason to suppose that it was developed subsequent to the theory of the founder; but even if it was, it became part of the Epicurean conception of space, and I presume that Epicurus' theory was not inhospitable to such an innovation.

Holger Essler

Space and Movement in Philodemus' *De dis* 3: an Anti-Aristotelian Account

Although Epicurus' main work is entitled *On Nature*, according to him the main goal of the study of nature (φυσιολογία) is an ethical one. In fact, as he puts it, "if we were not troubled by our suspicions of the phenomena of the sky and about death, fearing that it concerns us, and also by our failure to grasp the limits of pains and desires, we should have no need of natural science" (*KD* 11). Given this subordination, it is evident, then, that in works about ethical topics physics would only be touched upon, if it had direct implications or offered solutions to a specific ethical problem. It is thus no surprise that there are very few references to physics in the ethical and aesthetic works by Philodemus and other later Epicureans. The area where ethics is most connected to physics is theology.[1] In particular physics comes into play when we are dealing with the vexed question of the physical constitution of the Epicurean gods. The problem was already stated by Cicero (*ND* 1, 68): "suppose we allow that the gods are made of atoms; then it follows that they are not eternal".

Physical problems continue to surface when Philodemus tries to provide a more detailed account of the life of the gods. In what follows I shall concentrate on two consecutive passages of his *On Gods* 3, the first discussing the space of the gods (col. 8, 5 – col. 10, 6), the second their locomotion (col. 10, 6 – col. 11, 7). These texts, I believe, will allow us to come to a first if preliminary assessment of Philodemus' acquaintance with and application of physical doctrines of rival schools. My claim is that he is well aware of very specialized discussions and is even autonomously reworking and adapting them to the purpose of his own exposition. In particular I want to argue that Philodemus in this passage is referring to arguments and expressions used by Aristotle in his *Metaphysics* and meteorological works.

It is of course impossible to prove that Philodemus had first hand knowledge of these works. Anthologies, summaries and previous Epicurean writers always remain a possible source. A cumulative argument, however, does not seem out of place. In his aesthetic and rhetorical works Philodemus shows himself well

1 Accordingly the word 'atom' in Philodemus is confined to his semeiotic and theological writings, see Usener 1977, 124–127 s.v., Vooys 1934, 52 s.v. For an overview about authors writing on physics from Philodemus' time and this philosopher's own treatment of the topic, see Sedley 2010, 63–67.

acquainted with Peripatetic writings. The most striking example is his extensive use of Aristotle's *On Poets* in the fourth book of his *On Poems*,[2] Gigante in his *Kepos e Peripatos* lists references to Aristotle's *Politics* and *Rhetoric*, as well as to his lost *Gryllus*, *Eudemus*, *Synagogē technōn* and *On Philosophy*.[3] And moving closer to our field of investigation, we not only find Philodemus' report about Epicurus' studying of some of Aristotle's works,[4] but also a very likely quotation from Aristotle's *Metaphysics*.[5] Many passages in his *On Sensations* seem to answer on Aristotle's *De anima*,[6] and in *On Signs* Philodemus engages in arguments bearing on astronomical problems by trying to defend an affirmation endorsed by Epicurus, but previously ridiculed by Aristotle.[7] There seems to be a general tendency among the Epicureans to adopt positions previously discarded by Aristotle (and/or Plato) and structural parallels between the theology of Aristotle and of Epicurus have been stressed both in antiquity and modern times.[8] But even in places were they agree on the results, they arrive there by very different arguments.[9] Philodemus may thus be seen to follow in the tradition of Epicurus' own polemics against Peripatetic doctrines,[10] but some doctrinal innovations are very likely due to himself.[11]

In Philodemus' *On Gods* several references to Aristotle have been detected. The detailed discussion of Peripatetic arguments on the fear of death in book 1 may be referred to the beginning of Aristotle's *Topica* 3.[12] In *On Gods* 3 Aristotle is named explicitly a couple of columns before our passage,[13] and Arrighetti has already pointed out that Philodemus' polemics concerning the motion of the gods are mainly directed against Aristotelian tenets.[14]

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2 See Janko 2010, 217–221.

3 Gigante 1999, 63–65.

4 *Adv.* fr. 111 (Angeli 1988), 9–10; see Mansfeld 1994, 32 [240] n. 15.

5 *Metaph*. 993a30–b7 and Phld. *Rhet*. 8, fr. 25, 9–15; see Longo Auricchio 1991, 97–98.

6 Monet 1996, 735–748.

7 Arist. *Meteor*. 339b30–34, Epic. *Ep. Pyth.* 91 (Arrighetti 1973), Phld. *Sign*. col. 10, 1–11, 8 (De Lacy 1978).

8 See Merlan 1967, 494; Krämer 1971, 132 and 146–147. On Arist. *Metaph*. 1074a31–38 and the Scholion on KD 1 see Merlan 1960, 97.

9 Krämer 1971, 153.

10 The founding study is of course Bignone 1936. For theology see Moreau 1968, 293; Alfieri 1953, 169. Alfieri, 85 and 92, holds that Epicurus knew also Aristotle's esoteric writings. For other predecessors see Farrington 1967, passim, e.g. 103–104.

11 See Erler 1992; Janko 2000, 8–9.

12 Phld. *D.* 1, col. 19–21 (Diels 1915), see Gigante 1999, 85–86.

13 *D.* 3, col. 6 n. 1 (Diels 1917).

14 Arrighetti 1958, 83 and 94.

1 The text. Philodemus, *On Gods* 3, col. 8, 5 – col. 11, 7

The passage under examination consists of two chapters, each clearly marked as such in the papyrus by a *coronis* at its beginning and its end. The first chapter on the gods' dwelling-places (col. 8, 5 – col. 10, 6) is introduced by some remarks about the disposition of the whole treatise and previous Epicurean treatments of the subject (col. 8, 5–20). The following parts appear to be more original. Philodemus sets out a biological/empirical principle which helps to determine the gods' dwelling place. It is very likely that he goes on to identify this place with the *intermundia* which are mentioned in the next lacunose lines (col. 8, 20–34). After that he explains how wrong assumptions came about; in particular he offers a detailed account of the misleading concept formation about star gods (col. 8, 35 – col. 9, 36). The chapter closes with an appeal to Epicurean authority (Apollodorus of Athens, the predecessor of his teacher Zeno) and a generalising statement about the Epicurean view on the question. On the Epicurean account there is not only no danger for the gods' blessedness in these dwelling places, but they even deserve more worship than our shrines and temples. The second chapter about the gods' motion and rest (col. 10, 6 – 11, 7) takes up the wrong beliefs about star gods and starts with a refutation of the idea of endlessly revolving heavenly bodies. Neither restless motion nor complete immobility can be attributed to the gods (col. 10, 6–14). Philodemus also excludes another possibility, namely that the gods' motion is only an illusion created by a succession of similar appearances at subsequent places (col. 10, 17–25). In the following heavily damaged lines he seems to come back to Epicurean authors, this time refuting a heterodox view held by Antiphanes (col. 10, 31–39). As in the preceding chapter, he closes with a summary of the Epicurean doctrine and an affirmation that with this explanation the gods' motion is conceivable without any problem.

A common thematic nucleus in both chapters becomes clear if we set aside Philodemus' auctorial remarks on disposition and his inner-Epicurean discussions: all passages that are not concerned with interpreting Epicurean authorities or dissidents treat physical arguments about the star gods. This is where Philodemus is most original and closest to Aristotle and we shall focus on these parts of the text. For convenience, however, I quote both chapters in full with a selective apparatus followed by an English translation:[15]

15 Readings and supplements are my own, if not stated otherwise. Trivial or impossible supplements by previous editors are not recorded. A detailed apparatus may be found in Essler 2009,

col. 8, 5 τοῦτο μὲν οὖν, τάχα δὲ
καὶ τὰ προκείμενα δύο σκέμματα – εἰ καί τισιν δόξει
τοῦ συνεχοῦς ὑπομνήματος οἰκειοτέραν ἔχειν
τὴν διάληψιν – ᾠκονομήσθω⟨ι⟩ διὰ τ̣[ὸ] καὶ τῆι νῦν
προσθέ[σ]ε̣[ι] π̣ως συνῆφθ̣αι. κ̣αιρ[. . . . . ἄ]λ̣λ̣ο̣ι̣[. . . .
10 . . . . .]. . . [
. . . . . ἐκ]ε̣ίνωι καὶ ἔφα[μεν πρὸς μονὴν θε]ῶν συνερ-
γεῖν̣ [τὰ] λ̣[η]φθέντα. γενόμενοι δ’ [ἀπ]ὸ τούτων
μηδὲ τ̣ο̣[ὺς] τόπους, ἔνθ’ ε[ἰ]σὶν ο̣ἱ θεο[ί, πα]ραλίπωμεν,
εἰ καὶ τέτ[ευ]χε τὸ μέρος ἀποδόσε[ως κἀκεῖ]νος ἐν τ̣ῷ̃
15 π̣έ̣[μ]π̣[τωι] π̣ερὶ τῆς κ̣ά̣τ̣ω φ̣[ορᾶς παρ]ε̣μ̣φ̣[αίν]ω̣[ν
. .[. . . . .] ἐπιτηδε̣[. . . . . .
. . . . .]υτ̣.[. . . . . .
. . . .[. . . . . . .]. ἀ̣φ̣[θα]ρ̣σίαν καὶ π̣ρ̣ὸς ν[. . . .] οὐ-
χ ὅθεν εὐ[σ]τ[α]θεῖ̣[ν, ἐ]π̣εί γε δεῖ τεκμηριοῦσθαι τ̣ο̣ῖς
20 φαινομένο̣ις. ἅ̣περ ἔδειξε̣[ν] ἄλλους ἄλλαις φύσεσιν
οἰκείους ε̣ἶ̣ν̣α̣ι̣, καὶ τοῖς μὲν ὑγρ̣ά̣, τοῖς δ’ ἀέρα καὶ γῆν. τ[ο]ῦ-
το μὲν ζώιων, τοῦτο δὲ φυτῶν καὶ τῶν ὁμ[οί]ων, μάλιστα
δὲ τοῖς θεο̣ῖς δεῖ διὰ τὸ τοῖς μὲν ἄλλοις πρὸς ποσὸν χρόνον
εἶναι τὰς διαμονάς, τοῖς δὲ πρὸς τὸν αἰώνιον, ὃ⟨ν⟩
25 χρὴ ἀνέ[σ]ει μηδέν, ἀλλὰ μ̣η̣δ̣’ ἐλάχιστον, ἐντρέχειν
λύμης α̣ἰ̣[τ]ιον. ὡς γὰρ τὰ ἅ̣[λλ]α τ[ὰ πρὸς] διαμονὴν καὶ
ῥαιστώνην σ[υ]νεργοῦντ[α] νέ[μεσθαι δ]έον ἕως ἀ-
ιδι]ό̣τητος ἐπὶ τοὺ̣ς κρατ[ί]σ̣τ̣[ους, οὕτω]ς καὶ τὰ [. .
. . . . .]. . καὶ τ̣[ἄλ]λ̣α τιθ̣[.]. .[.]. [.]ρα καὶ χορη-
30 γ. . . . .]. λ[. . . .]ω̣.[.]. . . λο[. .]. [. .]. [.]. [. .]ουσιν μὲν
. . . . .]ο[. . . . .]. . μη[. .]. [. . .]. ν[.]. [.]λλοις ἀσυμ-
φύλου διαστημα. .]. λ̣. [. .]. [.]. . . . [σ]υμφύλου διαστη-
μα. . . . .]. . [. .] ἀ̣λ̣λ̣’ ἅ̣π̣α̣[ν] μετ̣α̣[κό]σ̣μιον
. . . . .]. . [. . . . .]. . [. .]ω. . . . . ραφο
35 . . .]. . . . [. . . . .]. . υ̣σ[.]. [. . .]. α̣ι̣. οις τόπ[οις ἐν]νοηθ̣[έν-
τ]ων εὐόδως καὶ μάλιστα λ̣αμβάνει τὰ[ς σ]υμπλοκ̣ά̣[ς,
ὅ̣θεν αὐτῶν καὶ τὰς π̣ρ̣ώ̣τ̣α̣ς καὶ συγγενικ̣[ὰς] ἔ̣[λαβ]εν
νοήσεις. καθάρειοι γὰρ π[ρ]ο̣π̣ί̣π̣τουσιν καὶ ἀκεραίους
παρέχοντες ἀεὶ τὰς φαν[τ]α̣σίας. οἱ δὲ περὶ τὴν γῆν
40 παρεπιμολ[ύ]νονταί τινων ἀνοικειοτέρων ἐπι-

165–169, and 2012, 259–275. For further readings and a commentary on the first part see also Essler 2011b, 253–330. Translations from other authors follow the editions listed in the bibliography.

νοίαις καὶ ἐπὶ τῶν αὐτῶν μέντοι διαστημάτων ἄ-
στρ[οις τι]ṣὶν καὶ ἑτέροις τῶ[ν] ἀποτεθεωμένων ἀν-
θρώπ[οις] ṿοοῦνται καὶ συμπλ[έ]κονται τού[τ]οις ὁμώ-
col. 9 νυμ]οι φύσεις ἐπὶ τα[ὐ]τοῦ τοῖς θεωρουμένοις
ἡλίῳ καὶ σελήνηι διαστήματος Ἥλιος εἶναι καὶ Σε-
λήνη, καθ' ὃν τρόπον ἐπὶ τῆς αὐτῆς ἐπιφανείας
χρόαι πλείους διάφοροι προπίπτουσιν ὡς αὐτότα-
τα, τοῦ κατόπτρου καὶ τῆς ἐμφάσεως, τοῦ μὲν κα-
τόπτρου τελέως μικροῦ φαινομένου, τῆς δ' ἐμ-
φάσεως μεγάλης. ἐπὶ δὲ ταὐτοῦ κατὰ τοῦτο λέ-
γομεν, ὅτι διελεῖν οὐκ ἔστιν ἀριθμῶι τὰ διαστήμα-
τ' οὐδ' εἰπεῖṿ, ὅτι τὸ μὲν ἐπὶ τοῦδ' εἶναι τὸ ᾧ' ἐπὶ τοῦδε.
ἐ]πειδὴ γὰ[ρ νοο]ῦμεν θεο[ῦ μορ]φήν, νοοῦ[μ]ε̣ν δὲ καὶ
χρόαν τοῦ [κ]ατὰ μέρος ἄṣτρου καὶ νοεῖται τὰ
χρώματ' [ἐν τῇ ἐ]πιφανείαι, δῆλον ὡς ἐπὶ ταὐτοῦ
νοοῦμεν ἀμφότερα. καὶ ἀπὸ μέρους δ' ἔστιν εἰ-
πεῖν τὰς ἐπὶ ταὐṭ[ο]ῦ διαστήματος νοήσεις [. .
. .[. . .]ṣ[.]εχομεν. .[.]. αυτα μο[. . . . .]. α
. .[.]. o.υ περ[. .]. [. . . .]. [. .]. . . ο. .[. . . . .]. . [.]. ṣ
τει. . . ητιν[. .]ο[.]. [. . . . .]ο[.]. λ[.]. ο[. . .]. [. .] πα-
ραβεβλῆσθαι τὴν . . . ηṿ, οὐκ ὀρθὸν λέγειν πα-
ραβεβλῆσθαι τούτοις οὕτω σμικρ[οῖ]ς ὑπάρχου-
σι. καὶ κατὰ [τ]ὸν ὑπ[ε]ρβάṣ[ε]ως δὲ τῆς μεταξὺ τρόṇ[ον
ἀποδοτέον τὰς συμπλοκάς, καὶ μάλιστα κ̣α̣τ̣ὰ̣
τοῦτον. οὐ γὰρ ἀχωριστεῖν καὶ συμπεριπολεῖν
τοῖς ἄστροις ὑπολη[π]τέον τοὺς θεούς, ἀλλά, κ̣[ἂν
ὁπόσον βούλετα[ί] τις ἀπέχῃ τὰ γεννητικά, τῆς μ̣ε-
τ̣αξὺ διαστάσεως ὑπερβαινομ̣[έ]νης συνημ[μ]έ̣-
ν]ο̣υς προπίπτειṿ. ὅθεν καὶ τὸν Ἐπίκο̣υρ[ον ο]ὗ φ̣ᾳ̣-
μεν ὁτὲ μὲν ἐκ̣ τῶν αὐτῶṿ, ὁ̣τ̣[ὲ δέ . . . . .]
. . . . .]τω[.]π. . α.φον.[. . . . .]
. . . . π]λ̣[ή]ρεις θ̣ραṣ̣ύτητ̣ο̣[ς. . . . .]. [. . . .]κ̣αι [.]π[.
οὗτ]ος δ' ὁ λόγος ἐπὶ τῷ̣ τῶν ο.[.]. . . ωπ[. .]. [.]νου[. .
. . .]αισω μέγας ὢν ἀιδι[. . .]. [. . .]. ο[.]. υσ. α.[. . .
. . .]. τὴν μορφήν, οἱ μ̣ὲν τη[.]. [.]. [. . .]. ασ. ηλλοσ
τ̣ότ̣ε τὰ πλεῖστ̣α̣ τῶν αιτε. ι. τ̣ιο[.]. δ̣. ηδ[. . .
δ̣[ι]α ṿοεῖν ἐπὶ τ̣αὐτ[οῦ δι]ᾳ̣ṣτ̣ήμ̣α̣τ̣[ο]ς̣. καὶ [ὁ αὐτ]ὸ̣[ς τρόπος
κ̣ᾰ̣π̣ὶ τῶν ἄλλων τῶν καθ[ω]σιωμένων [ἡμῖν. . .
γίνοιτ' ἄν. [ο]ὐ γὰρ αὖ̣ φοβεῖσθαί γ' ἔσ̣τ̣ιν, ὅπ[ερ Ἀ-
πολλόδωρο[ς ἔφη τὰ ἔ]δ̣η λέγων μακρὰṇ δεῖν [ἀπεῖναι

τῶν παρ’ ἡμᾶς τὰ γενητὰ καὶ διαλυτὰ π[α]ρ[ε-
χόντων, ἵνα μὴ τούτοις συναναμιγνύμενα πρὸς
τὴν ἀφθαρσίαν ἐμποδίζηται. τῶν [γ]ὰρ κατ’ ἄλ-
ληλα πιπτόντων ἐμποδιστικῶν μακρὰ[ν] δεῖ ποι-
εῖν. ἐπὶ δὲ ταὐτοῦ διαστήματος κοινῶς γε̣ν̣ητοῖς
καὶ διαλυτοῖς, κ̣α̣θ’ οὓς εἴπαμεν τρόπους, οὐδὲν
col. 10 ὀρρωδ[εῖ]ν̣ προσ̣ῆκεν, ἀλλὰ καὶ γενν̣ᾶν ἔκ τινων [αὐ-
τῶν κἀκεῖνα. διὰ δὴ τὰ προειρημένα καὶ καλῶς ἔ-
χει τιμᾶν καὶ σέβεσθαι καὶ ταῦτα καὶ μᾶλλον ἢ τὰ
κατασκευαζόμενα πρὸς ἡμῶν ἔδη καὶ τ̣οὺς νεώς, ὡς̣ τὰ
μὲν αἰεὶ συνάπτεται τοῦ σεβασμοῦ τοῦ παντ̣ὸς
ἀξίοις, τὰ δ’ οὐχ ὁμοίως. περὶ τοίνυν κινήσεως
θεῶν ὧδε χρὴ γινώσκειν. οὔτε γὰρ οἰητέον ἔργον
μηθὲν ἕτερον ἔχειν αὐτοὺς ἢ διὰ τῆς ἀπ̣ειρί-
ας αἰῶν’ ὀδεύ[ε]ι̣ν̣ οὐδ̣ε̣[..]ᾳ̣ν̣..[..]..[..... ..
].τ.[.].[
.....]ως – ο[ὐδ’] εὐτυχὴς ὁ [ῥυ]μβονώμ[ε]νος ἅπαν-
τα] τὸν βίον – [οὔτ’] ἀκινήτους ὑποληπτέον – οὐδὲ
γ]ὰρ ἔτι ζῶ[ιο]ν νοεῖται τ[ὸ] τοιοῦτον. ἅμα δὲ καὶ
ἡ] δ̣ι̣αγωγὴ ... ἡδεῖα προπίπ̣τει καὶ [δι]ᾲ̣ τὰ ε.[..... .
.].ρ̣[..]ο.[..... ...]..[....].ο[....]..[.].[..... ...
.].ωδ̣[..].[..... .....]μ[...]π̣ο̣δ̣[..]νυ.[..... ..
ουν[...]λλο̣..ν̣ι̣ᾳ̣σ̣[...]. ο̣ὐ̣ γὰρ ἐκ̣ τῶν ὁ̣[μοίων..(.)
..]..[.] ἀπ’ αἰῶνος ὑπάρχ̣ο̣ν κινεῖται καθ’ ὃν τρ[όπο]ν
αἵ τ̣’ [ἐμ]φάσεις καὶ φ[λ]όγες [συχν]ὸν γεννῶντ[αι] τ̣[ὰς ἄλ-
λας ἐν ἄλλοις καὶ ἄλλ[οις ὡς] ἄ̣λ̣λω̣ν̣ καὶ ἀ̣λ̣̣λων τ[ι]ν̣ῶ̣ν̣
γινομένων. οὐ [γὰ]ρ ε̣[ἰς] λ̣όγωι θεωρούμ[εν]α τῶν
αἰτιῶν ἑτέρα καθ’ ἕκαστον α̣ἰσθητὸν [ἔστι]ν̣, ὲ̣[πεὶ
τὸ̣ γε̣γεννημέ̣νον οὐχ ἓ̣ν̣ καὶ ταὐτὸ κα[τ’] ἀ̣ριθμὸν
πρὸς τὸν αἰῶνα κ̣α̣θάπερ ἡμεῖς, ᾧ̣ πρὸς τ̣ὸ̣[ν ἀί]διον βίον
ὅπερ καὶ κιν[..... ...]τα[....]φ[..]..[..... .....
βουλη[τ]ον̣ ζ[..... ....]ο[ὐ]κε̣τ̣[....]υσαν[...
ᾳ̣π[..... ....]. ωσ̣[.]μ....[....]ᾳ̣[..... .....
ᾳ̣..[..... .....].[.]μ[.....]ν[..... ..]ᾳρε.[...
ᾳ̣[...].[....]. υπ[..... ..]αυτ̣[...].[..]. με[....
ω̣[..].[.] τ̣ο̣δε [...]ιασ.[.]. π̣[.]τ̣[.]δ[..]χη[...]. δε̣π̣ε
....] Ἀντιφανε[..]. σ̣τ̣[.]νο̣[.].[..]. ε̣[.].[..]. νη̣σιν
....]. νοιαν μνη[μονε]ύ̣οντος ν[.]π̣ε̣νθ[.]ητο.[.
.(.)]επ[.]†βᾳδιμον†[. κα]τ̣ᾲ τ[ὸ ἀπ]αράλλακ[το]ν ὁμοί-
ους, ἀεὶ φαν[τασίας δι]ᾳφόρ̣ο̣υ γινομένης ἐπὶ

τ[ῶν] ἐξῆς τ[ό]πω[ν ...].[.(.)]. οὐ δῆλοι, διότι καὶ τ[ὴ]ν̣
ὕπαρξιν ἀνα[ι]ρ̣οῦσ̣[ιν, οὐ] μ̣όνον τὴν κίνησιν τῶν̣
θεῶν. ἓν γὰρ εἶναι δεῖ τὸ κινοῦμενον, ἀλλ' οὐ πολ̣λ̣ὰ
ἐπὶ τῶν ἐξῆς τόπων, καὶ τὸ ζῶν αἰεὶ τ̣α̣ὐτόν,
ἀλλ' οὐχ ὅμοια πολλά. οὐ μὴν ἀλλὰ τὸν ε̣[ἰρ]ημέ-
νον τρόπον ὁ τοιοῦτος ἀμείβει θεὸς ὁ τ[ῆι]δ' [ἐ]κ̣ τῶν
αὐτῶν συνεστηκώς, μεταλαμβανόν̣των
col. 11 ἑτέρ̣ο̣υς τόπ̣ο̣υς ἐ̣ν̣ ἑτέ̣ρ̣οις χρόνοις τῶν γεν-
νητικῷ̣ν. ἔστιν μὲγ γάρ τις ὡρισμένος τόπος, ὃν
οὐκ ἐκβαίνει τὸν αἰῶνα τὰ στοιχεῖα, τῶν δὲ κατὰ
μέρος ἐ̣ν̣ τούτωι τόπων ἀνὰ μέρος ὁτὲ μὲν
τούτους πέφυκεν μεταλαμβάνειν, ὁτὲ δὲ τού-
τους, ὥστε καὶ τὰς ἐξ αὐτῶν ἑνότητας εὐόδως
νοεῖσθαι κινουμένας.

col. 8, 5 coronis 9 κ̣αιρ[ὸς δ' ἂν ἄ]λλ̣ο̣ι[ς ἐπι|χειρῆσαι σκέμμασιν] e.g. Essler **12** [συν]αφθέντα et [ἀπ]ὸ Philippson **14** [κἀκεῖ]νος Hammerstaedt: [πλείο]νος Henry **24** ο(ἷς) Scotti **25** ἀνέ[σ]ει Hammerstaedt: ἂν ἕ[ξ]ῃ Scott: ἑ[ξ]ῆ̣ susp. Diels **26** τ[ὰ εἰς] Diels **27–28** ἀ|[ιδιό]τητος Diels **28** καὶ κρατ⟨ί⟩σ[ταις Scott: κρ. [ἀρχαῖς] Diels **33** μετα[κόσ]μιον Diels **35–36** τόπ[οις ἡ] νόησ[ις αὐ|τ]ῶν Diels: [τού|τω]ν Arrighetti **37** ἕ[χομ]εν Diels **38** π[ροσπίπ]τουσιν Woodward **42–43** ἀν|θρώπ[οις] J. Delattre-Biencourt: ἀν|θρώπ[ων] Scott ⟨καὶ ὡς⟩ ὁμώ- ins. Woodward

col. 9, 2 ⟨ὡς⟩ ἥλιος Liebich **4–5** ὡσαυτότα|τα Woodward **10** suppl. Scott **12** suppl. Diels **14** νοηθείσ[ας D. Delattre **15** init. φῠ̣[σει]ς Janko **18** τὴν [ν]ό[ησιν] Scott: τῇ [ὕλῃ ὡς] Scotti: [μ]ο[ρφὴ]ν̣ Purinton: φῠ̣σιν Janko **20** Woodward: ὑπ[έρ]βα[σιν] Scott: μεταξύ[τητι] Arrighetti **25** ὑπερβαινο[μένης] συνη[Arrighetti: ὑπερβαίν[ων τοὺς] συνημ[έ|ν]ους Scotti: -βαίνε̣[ιν ἢ μ]ὴ Scott: ὑπ. κ̣(αὶ) μὴ Diels **26** Ἐπ̣ίκ[ο]υ[ρον] Scott [ο]ὐ Janko **27–28** αὐτ[ῶν ὅτε δ' ἐκ τῶν ὁμοίων | συνεσ]τῶ[τα suppl. Woodward **29** π]λ[ή]ρεις Karamanolis **30** Diels **33–34** possis [ἀί]|δ̣[ι]α γοεῖν vel δ[ι]' ἃ γοεῖν vel δ[ι]αγοεῖν τ]αὐτ[οῦ Scott **35** [ἡμῖν Henry: [τόπων Woodward: [θεῶν Essler **36** [ο]ὐ Scotti: [ε]ὖ Philippson ἄ[ν] Scott **37** μακρὰ[ν ἀπ]εῖ[ναι Scotti: μ. δεῖν [ποιεῖν] Scott: μ. δ. [ἀπέχειν] Diels

col. 10, 1–2 et [ὄν]|των possis: [αὐ]|τῶν Hammerstaedt **4** fin. ὅ[τι] Scotti: ἐ[πεὶ] Diels **5** ⟨τοῖς⟩ τοῦ Arrighetti **6** coronis et dicolon ante περὶ **9** αἰῶν' ὀδεύ[ε]ιν Henry **11** ο[ὐδ'] Henry [ῥυ]μ-βονώμ[εν]ος ἅπαν- Scotti **12** Scott **13** ζῶ[ιο]ν Diels, cetera Scott τ[ι] Scotti **14** π̣ᾶ̣ᾳ̣' ἡδεῖα dub. Essler: π̣ᾳ̣ηδεῖα Capasso **17–18** τῶν ὁ̣[μοίων τὸ | θε]ῖο̣[ν] vel. [στοι|χε]ί̣ω̣[ν] Essler: σ[τοιχεί|ων] Philippson **18** τ[ρόπον Scotti **19** αἵ τε̣ φάσεις Diels: [ἐκ]φάσεις dub. Philippson **20** ἄλλ̣[οις ἐπ'] Scotti: ἀ. [χρ(όνοις)] Diels: ἀ. [ἐξ] Scott **22** [ἔστι]γ̣ dub. Essler: [χρόνον] Scott **23** Scott **24** ὃ Essler: ο⟨ὐ⟩ Philippson: ἕ⟨ν⟩ Diels **32** καὶ vel πρὸς ἐπ[ί]νοιαν Essler **33** ἐπ[ι]βαλ̣λ̣ον[et μον[ήν] possis **35** ἐξ ἴ]σου Philippson: π̣[ῶ]ς οὐ Henry **36** [οὐ μόν]ον Arrighetti: [καθό]σον Philippson **39** ε[ἰρ]ημ. Scotti **40** ὅ[στις ἐ]κ Scott: ὃ[ς οὐκ ἐ]κ Philippson: ὃ[ς κἂν ἐκ] Purinton **41** μεταλαμβάν[ει τ]ῶν Scott: [καὶ τ]ῶν Scotti

col. 11, 7 coronis

[col. 8] Let it be handled, what has been expounded about this question, as well as the two topics presently before us, even if some might think their analysis would be more suitably dealt with here than in the continuous treatise – because they are all somehow connected to the topic of the current addition. [This seems to be] the right moment to [address] other [questions]. (*1 line missing*) [...] to Him (*scil.* Epicurus) and said that the things received contribute to the stability of the gods. Having stated this, let us not omit the places where the gods reside, although it happens that He (*scil.* Epicurus) has implicitly presented a part of the explanation in the fifth book (*scil.* of *On Nature*), talking about the motion downwards [...] aptly [...] imperishability and for (*missing word*) not and thus they enjoy tranquillity, because we have to infer from the appearances.

These (*scil.* the appearances) demonstrate that every nature has a different location suitable to it. To some it is water, to others air and earth. In one case for animals in another for plants and the like. But especially for the gods there has to (be a suitable location), due to the fact that, while all the others have their permanence for a certain time only, the gods have it for eternity. During this time they must not encounter even the slightest cause of nuisance because of remission (of happiness). For in the same way that one has to attribute to the mightiest as forever having the other things that contribute to permanence and easiness of life, also the [...] unsuitable distance [...] suitable distance [...] every *intermundium* [...] they (*scil.* the gods) are conceived without problems at [...] places and (the mind) best grasps the connections (*scil.* between the invisible and the visible) from where it (*scil.* the mind) received the first, congenital ideas about them. For they appear as pure and always producing their impressions without contamination. The others, however, are sullied in the vicinity of the earth by conceptions of some less suitable things and they are conceived as being at the same distances as certain stars and others who have been deified by humans. And beings having the same name [col. 9] at the same distance as the sun and moon are observed, are conjoined with them to be Helios and Selene in the way that on the same surface several different colours appear, exactly as is the case with a mirror and its reflection. There the mirror appears perfectly small, but the reflection large. By 'at the same distance' we mean that it is not possible to distinguish the distances by number nor to say that one is at this (distance), the other at another. For since we conceive the form of a god and we conceive the colour of a particular star and the colours are conceived as being on the (same) surface, it is clear that we conceive both as being at the same (distance). And in part it is possible to say that the conceptions at the same distance [...] have [...] match with the [...] it is not correct to say that the (*missing word*) is matched up with these as they are so small. And one must account for the connections according to transcendence of the intervening distance and most emphatically so. For one must not suppose

that the gods are inseparable from and revolve together with the stars, but that, even if the things which generate (*scil.* the images of the gods) are as far away as anyone could wish, they transcend the intervening distance and appear in a constant stream. Thus we deny that Epicurus [...] sometimes out of the same [...]. [...] full of rashness. [...] the same is true for [...] who is great, eternal [...] the form [...] then most of [...] conceive of at the same distance. And the same explanation may hold in the case of the other things[16] that have been worshipped.

For on the other hand it is impossible (*scil.* for the gods) to fear – as is stated by Apollodorus when he says that the dwellings have to be far away from the forces in our world that produce things subject to generation and dissolution, lest they become mixed up with these to the detriment of their imperishability. For we must make them out to be far from the hindering factors that clash against each other. However, being at the same distance from things subject to generation and dissolution in general, in the way we have said before, it is proper not to have any [col. 10] fear, but on the contrary it is befitting to generate the former (*scil.* the dwellings) also from some of their elements. In the view of what has been said before it is appropriate to honour and revere these (*scil.* the dwellings) as well, and more than the shrines and temples built by us, because they are always in connection with beings worthy of complete reverence, whereas our shrines and temples are not (in connection) in the same way.

As far as the movement of the gods is concerned, one has to understand it in the following way. For it should neither be thought that they (*scil.* the gods) have no other occupation than travelling forever through infinity, nor [...] nor is he happy who is coiling his way all his life. Nor should it be thought that they are motionless. For such a thing is not even conceived as a living being. At the same time their way of life appears as pleasant and because of [...]. For (the divinity), which exists from eternity being made up of similar [elements], is not moving in the way reflections or flames are often created one after the other, becoming a different (reflection or flame) in subsequent places. For in the case of objects perceived by the mind there can be no different cause for every single perception, because the result is not for all of its life numerically one and the same like us, which for eternal life [...] which also movement [...].

[...] Antiphanes [...] bearing in mind [...] indistinguishably similar, while an appearance different in every instance arises at the successive places [...]. Are they not obviously abolishing even the existence of the gods, not only their movement? For what is moving has to be one, not many things at succeeding places (it moves through), and a living being has to be always the same, not many similar

16 The masculine is equally possible.

things. Nonetheless such a god, who thus consists of the same (*scil.* elements), changes (*scil.* his place) in the aforementioned way, while the generating materials successively [col. 11] take over different places at different times. For there is a circumscribed place, which the elements do not ever leave, but from the particular places within it is their nature to take over place after place – sometimes these, sometimes those – so that the units consisting of them are easily conceived as moving.

2 The gods' dwelling place

Let us start with Philodemus' guiding principle in establishing the gods' dwelling place. He begins, in typical Epicurean fashion, with an appeal to phenomena. According to Philodemus we know from experience that every living being has a place suitable for its existence (col. 8, 20–23), and thus we may plausibly infer such a place for the gods as well. A similar cosmological argument is put forward in Cotta's criticism of Epicurean theology:

> As for locality, even the inanimate elements each have their own particular region: earth occupies the lowest place, water covers the earth, to air is assigned the upper realm, and the ethereal fires occupy the highest confines of all. Animals again are divided into those that live on land and those that live in the water, while a third class are amphibious and dwell in both regions.[17]

The examples used by Cotta and by Philodemus partly overlap (animals living in water, on land), and the point made is the same in both instances.[18] Philippson suggested that both texts ultimately referred to Aristotle.[19] However the idea of living beings and elements being divided across several places has a long tradition.[20]

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17 Cic. *ND* 1, 103: *nam locus quidem his etiam naturis, quae sine animis sunt, suus est cuique proprius, ut terra infimum teneat, hanc inundet aqua, superior ⟨aeri⟩, aetheriis ignibus altissima ora reddatur; bestiarum autem terrenae sunt aliae, partim aquatiles, aliae quasi ancipites in utraque sede viventes, sunt quaedam etiam quae igne nasci putentur appareantque in ardentibus fornacibus saepe volitantes*.

18 I have argued elsewhere that these two passages might depend on each other: Essler 2011a, 148–150.

19 Philippson 1940, 36, thought of Carneades as an intermediary.

20 The tradition begins at least with Empedocles (31A72 D.-K. 1951), see Essler 2011a, 149. Testimonies for each element having its own type of animate inhabitants are collected in Pease 1955,

Yet there is another, biological version of this argument, which Cicero explicitly attributes to Aristotle. The context of this biological argument in Cicero is again theological. Its purpose is to demonstrate the existence of the star gods. Like the previous, physical principle it takes a start from the elements (earth, water and air) and their different capabilities not of sustaining but of generating living beings:

> Since therefore some living creatures are born on the earth, others in the water and others in the air, it is absurd, so Aristotle holds, to suppose that no living animal is born in that element which is most adapted for the generation of living things.[21]

The Greek source of this reference is not extant.[22] However, the same biological principle is still present in Aristotle's and Theophrastus' writings on animals and plants: in *On Breathing* Aristotle states his own principle of the proper dwelling-place being determined by each animal's physical constitution:

> One is bound to suppose that it is by necessity and for the sake of motion that such creatures are so made, just as there are many that are not so made; for some are made from a lager proportion of earth, such as the genus of plants, and others from water, such as the water animals; but of the winged and land animals some are made from air and some from fire. Each class has its sphere of life in the region appropriate (ἐν τοῖς οἰκεῖοις τόποις) to its preponderating element.[23]

He reaffirms this principle in a general sense: "any constitution is best preserved in its appropriate region",[24] and extends its function to reciprocity: "the material constitution of anything corresponds in fact to its environment".[25] The same

476–477 on *bestiarum*. A prominent Epicurean example is Lucretius' proof that the mind cannot exist outside the body and that mind and soul are mortal (Lucr. 5, 128–133; cf. 3, 784–789)

21 Cic. *ND* 2, 42: *Cum igitur aliorum animantium ortus in terra sit aliorum in aqua in aere aliorum, absurdum esse Aristoteli videtur in ea parte quae sit ad gignenda animantia aptissima animal gigni nullum putare*.

22 It probably came from *De philosophia*. Bibliography and related passages are collected by Pease 1958, 639 on *Aristoteli*.

23 Arist. *Resp*. 477a25–31: τὴν δ' ἐξ ἀνάγκης καὶ τῆς κινήσεως αἰτίαν καὶ τὰ τοιαῦτα δεῖ νομίζειν συνιστάναι ζῷα καθάπερ καὶ μὴ τοιαῦτα πολλὰ συνέστηκεν· τὰ μὲν γὰρ ἐκ γῆς πλείονος συνέστηκεν, οἷον τὸ τῶν φυτῶν γένος, τὰ δ' ἐξ ὕδατος, οἷον τὸ τῶν ἐνύδρων· τῶν δὲ πτηνῶν καὶ πεζῶν τὰ μὲν ἐξ ἀέρος τὰ δ' ἐκ πυρός. ἕκαστα δ' ἐν τοῖς οἰκείοις τόποις ἔχει τὴν τάξιν αὐτῶν. The translation follows W.S. Hett, Cambridge/Massachusetts 1957.

24 *Resp*. 477b17–18: ἡ δὲ φύσις ἐν τοῖς οἰκείοις σῴζεται μάλιστα τόποις.

25 *Resp*. 477b30–31: αἱ μὲν οὖν φύσεις τῆς ὕλης, ἐν οἵῳπερ τόπῳ εἰσί, τοιαῦται οὖσαι τυγχάνουσιν.

principle is applied by Theophrastus in his *Enquiry into Plants.* I limit myself to quoting the beginning of book four, where he sets out to explain the geographical distribution of trees and plants special to particular regions and positions:

> The differences between trees of the same kind have already been considered. Now all grow fairer and are more vigorous in their proper positions (ἐν τοῖς οἰκεῖοις τόποις); for wild, no less than cultivated trees, have each their own positions.[26]

Thus Cicero's testimony and Aristotle's own writings attest to two principles of the proper place well established and in wide use within the Peripatetic tradition: a physical one and a biological one. Aristotelian cosmology on the one hand is mainly built upon the physical principle which assigns to each element its proper place. In *On the Heavens* Aristotle uses it to prove that there can only be one world, not many (276b11–21) – thus excluding the existence of the *intermundia*, the realms of the Epicurean gods – and to define natural motion (279b2),[27] which is the basis of his argument in favour of the divine nature of the heavenly spheres. On the other hand Philodemus (like Cicero's spokesman) takes up Aristotle's biological principle of the proper place to construct his cosmology.

I suggest that this move is Philodemus' first step to undermine and demolish the Peripatetic position on the star gods. By exchanging one Aristotelian principle of proper place with the other he turns his opponent's arguments against him. The passage in Philodemus and the Aristotelian view reported by Cicero bear the closest resemblance. They use the same examples. The elements, water, air and earth occur both in Aristotle and Philodemus, as do the corresponding living beings, plants and animals. Furthermore, the argument points in the same direction: Aristotle in Cicero is talking about the special environment most suited to ensuring the survival and growth of each living being, while Philodemus is concerned with finding this kind of place for the Epicurean gods. Thus he applies the principle which he shares with Aristotle, namely that each living being has a proper habitat suitable to sustaining its life, to the special case of the gods.

It has been a matter of debate whether the way of addressing the question of the gods' dwelling place and the solution that they live in the *intermundia*, which was presumably stated in the following lines (cf. col. 8, 33 μετ̣ὰ[κό]ϱμιον), is Philodemus' own invention or whether he was following one of his Epicurean predecessors. Our passage is the first attestation of μετακόσμιον in this context. Later sources, however, attribute this view explicitly to Epicurus. Their statement is con-

26 Thphr. *HP* 4, 1.

27 On the importance of natural motion in Aristotle's cosmology see Conroy 1976, 59–80.

tested by some scholars who believe that they are not reporting Epicurus' own words and thoughts, but attributing to him interpretations by later Epicureans.[28] I believe that, if not the result (i.e. the *intermundia*), at least Philodemus' explanation for determining the gods' dwelling place should most plausibly be credited to himself. As far as we can tell, he is not naming any authority on that matter and the biological principle of the proper place is first attested as a theological argument in Philodemus' time (in his *De dis* 3 and Cicero's *ND* 2). Strictly speaking, the same situation applies to the next passage on the star gods, although attempts have been made to identify events contemporary to Philodemus' time.[29]

3 The refutation of the star gods

The main passages about the star gods are found in Aristotle's *Metaphysics* and *On the Heavens*. Let us start with Aristotle's definition of god: "We hold, then, that god is a living being, eternal, most good; and therefore life and a continuous eternal existence belong to god; for that is what god is".[30] Two of these divine properties are shared by the Epicurean gods: life and eternity. They will be at the basis of Philodemus' argument. He is of course following a long tradition within the Epicurean school: the polemics against the star gods go back to Epicurus himself.[31] In fact Philodemus' argument is twofold. On the one hand he quotes an Epicurean authority, Apollodorus of Athens, to show that the gods cannot be in direct contact with our world, because this would impair their eternal existence (col. 9, 36–42), but this only serves to round off his exposition. In the main part he is not arguing directly against the star gods – they had already been refuted by his masters[32] – but instead he provides a physical explanation as to how these wrong assumptions about the divinity of the stars come about. Following the tradition of

28 See the overview in Essler 2011a, 236–245. Woodward 1989, 30–31, sees Philodemus' account as a defence against objections by Carneades, Gigante 1981, 169, assumed an anthropomorphic adaptation of a doctrine by Demetrius Laco, Hirzel 1877, 172–185, by Zeno of Sidon. See Erler 1992, 195 n. 111.

29 Woodward 1989, 32, followed by Erler 1992, 192–195, and Koch 2005, 118. The assumption of a change of doctrine by Philodemus in order to please his patron is however not supported by the text, see already Arrighetti 1958, 93.

30 *Metaph.* 1072b28–30: φαμὲν δὴ τὸν θεὸν εἶναι ζῷον ἀΐδιον ἄριστον, ὥστε ζωὴ καὶ αἰὼν συνεχὴς καὶ ἀΐδιος ὑπάρχει τῷ θεῷ· τοῦτο γὰρ ὁ θεός.

31 See Essler 2011a, 247–252.

32 Cf. Epic. *Ep. Hdt.*, 77; Lucr. 5, 78–80, 122–145; Aug. *CD* 18, 41; Plu. *Col.* 1123a, see Philippson 1918, 358–395.

his school, Philodemus' argumentation seems not only to rely on Epicurean principles, but also to make use of Aristotelian arguments by turning them against their author. His explanation draws an analogy between optical and intellectual perception to posit the case of an object which is entirely appearance (ἔμφασις). In case of the star gods, Philodemus claims they are mere reflections (ἐμφάσεις) of the real gods. As examples he chooses the sun and the moon, which are in turn identified with the divinities Helios and Selene:

> And beings having the same name at the same distance as the sun and moon are observed, are conjoined with them to be Helios and Selene in the way that on the same surface several different colours appear, exactly as is the case with a mirror and its reflection (col. 8, 43 – col. 9, 5).

Philodemus' whole construction is an analogy to Aristotle's famous theory of the rainbow.[33] We have his own description at the beginning of *Meteor.* 3, Seneca's account (*QN* 1, 3–8) and a detailed summary in Aëtius (3, 5). All these sources attribute to Aristotle the main features of the optical phenomenon: imaginary existence (ἔμφασις), very small mirrors, the reflection of colour without shape. By these features Aristotle explains the rainbow as a special reflection of the sun in a cloud of raindrops without any proper existence and likewise Philodemus explains the imaginary star gods as a reflection of the real gods appearing at the same place as the heavenly bodies. In applying this explanation to the star gods Philodemus attains several goals: a) he provides a physical explanation of the common belief in the divine nature of heavenly bodies; b) he demonstrates these beliefs to be wrong because they are based on a wrong interpretation of sense perception; c) he again turns an Aristotelian argument against an Aristotelian doctrine.

The conclusion underlying Philodemus' argument against the star gods is stated explicitly by Aëtius in regard to the rainbow: "of the things on high some … have real existence (καθ' ὑπόστασιν γίνεται) and others come about through appearance (κατ' ἔμφασιν), lacking a real existence of their own … now the rainbow is according to appearance".[34] Seneca goes in the same direction:

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33 The same is true for Aristotle's theory of the halo, but since in later sources the explanation of the rainbow is better attested, I shall focus on this wider known example and for this reason also omit the ancient commentators on Aristotle. References to them and on the halo are collected in Essler 2011a, 291–294. For a modern assessment of Aristotle's theory of the rainbow see Lee / Fraser 2001, 105–111 and 210.

34 Aët. 3, 5, 1 (Diels 1879): τῶν μεταρσίων παθῶν τὰ μὲν καθ' ὑπόστασιν γίνεται … , τὰ δὲ κατ' ἔμφασιν ἰδίαν οὐκ ἔχοντα ὑπόστασιν … ἔστιν οὖν κατ' ἔμφασιν ἡ ἶρις. A similar formal opposi-

"there is no actual substance in that reflecting cloud; it is no material body but an apparition, a likeness without reality".[35] Since both Seneca and Aëtius present this view together with the typical doctrine of visual rays, we may confidently accept it as Aristotelian.[36] As Jaap Mansfeld puts it: "Aristotle seems to have been quite prominent and rather exceptional in claiming and arguing that rainbows and halos are optical phenomena, appearances".[37]

Philodemus continues his explanation with more details. The divine images emitted by the gods from the *intermundia* seemingly originate from the stars themselves, because when these *eidōla* pass the outer rim of our universe, that is the sphere where the stars are attached, they lose the information about the distance travelled so far. In this way, when they are perceived by us, they give the impression of being emitted from the same distance as the *eidōla* from the stars and thus they *seem* to come from them. As a proof Philodemus adduces an optical phenomenon that shows exactly this characteristic of suppressing the distance between the emitter and another object on the way to the observer:

> There the mirror appears perfectly small, but the reflection large. By 'at the same distance' we mean that it is not possible to distinguish the distances by number nor to say that one is at this (distance), the other at another. For since we conceive the form of a god and we conceive the colour of a particular star and the colours are conceived as being on the (same) surface, it is clear that we conceive both as being at the same (distance) (Phld. *D.* 3, col. 9, 5–13).

It is worth noting how Philodemus distinguishes between the form of the god (μορφή), his colour (χρόα) and the colours (χρώματα). This corresponds to Epicurus' definition of optical perception in the *Letter to Herodotus*. According to that passage the sense of sight provides two pieces of information about the object: its

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tion is found in [Arist.], Mund. 395a28–30, but not in Aristole, although the distinction plays a prominent role in his discussion of the rainbow and mock suns in book 3 of the *Meteorologica*, see Mansfeld 2005, 30–31 [484–486], and 49 [504] on the "temporized unfolding of the distinction". Cf. also Sen. *QN* 1, 15, 6–7. For other examples and a bibliography on (Stoic) ὑπόστασις see Lachenaud 1993, 265 n. 4.

35 *QN* 1, 6, 4: *non est ergo propria in ista nube substantia, nec corpus est sed mendacium, sine re similitudo*.

36 Arist. *Meteor*. 373a32–b32; Sen. *QN* 1, 3–8; Aët. 3, 5, 3–9 (Diels 1879); see Mansfeld 2005, 44–46 [499–501]. Hall 1977, 413, concludes in regard to the passage on the rainbow that Seneca in *QN* 1, 3, 7–8 is very likely to have read Aristotle's *Meteor.* 1 or to have drawn on a very good and detailed source. Gross 1989, 46 with n. 2, attributes 3, 5–11 to Aristotle.

37 Mansfeld 2005, 54 [509].

form (μορφή) and its colour (χρῶμα, Epicur. *Ep*. *Hdt*., 49).[38] In his comparison, then, Philodemus is making use of a special kind of mirror with two peculiarities: on the one hand it is only reflecting the colour of an object, not its size and form, and on the other hand it gives the impression that the object reflected is situated on the very surface of the mirror. In this way the distance between mirror and reflected object is suppressed, thus making the appearance of the mirror coincide with the appearance of the object.

This is the same optical mechanism Aristotle uses to explain the rainbow. He starts from the principle that very small mirrors would only reflect the colour (χρώματα) but not the size and form (σχήματα) of an object.[39] The forming raindrops in a cloud of mist before the rain serve as small mirrors. They are each invisibly small, indivisible to our perception (μηδεμίαν αἰσθητὴν ἔχει διαίρεσιν), but together they form a continuous zone of reflection that creates one continuous appearance. However, unlike a normal mirror, each single mirror reflects only the colour of the sun, not its form and size:

> Now it is obvious and has already been stated that a mirror of this kind renders the colour of an object only, but not its shape. Hence it follows that when it is on the point of raining and the air in the clouds is in process of forming into raindrops but the rain is not yet actually there, if the sun is opposite, or any other object bright enough to make the cloud a mirror and cause the sight to be reflected to the object then the reflection must render the colour of the object without its shape. Since each of the mirrors is so small as to be invisible and what we see is the continuous magnitude made up of them all, the reflection necessarily gives us a continuous magnitude made up of one colour; each of the mirrors contributing the same colour to the whole. We may deduce that since these conditions are realizable, there will be an appearance due to reflection whenever the sun and the cloud are related in the way described, and we are between them.[40]

38 See also Lucretius' treatment of the rainbow, where he assigns just one colour to it (6, 526 *color … arqui*). On the various colours of the rainbow see Bradley 2009, 36–51.

39 Cf. *Meteor.* 372a32–b6: τῶν ἐνόπτρων ἐν ἐνίοις μὲν καὶ τὰ σχήματα ἐμφαίνεται, ἐν ἐνίοις δὲ τὰ χρώματα μόνον· τοιαῦτα δ' ἐστὶν ὅσα μικρὰ τῶν ἐνόπτρων, καὶ μηδεμίαν αἰσθητὴν ἔχει διαίρεσιν· ἐν γὰρ τούτοις τὸ μὲν σχῆμα ἀδύνατον ἐμφαίνεσθαι (δόξει γὰρ εἶναι διαιρετόν· πᾶν γὰρ σχῆμα ἅμα δοκεῖ σχῆμά τ' εἶναι καὶ διαίρεσιν ἔχειν), ἐπεὶ δ' ἐμφαίνεσθαί τι ἀναγκαῖον, τοῦτο δὲ ἀδύνατον, λείπεται τὸ χρῶμα μόνον ἐμφαίνεσθαι. Cf. Sen. *QN* 1, 5, 6 *[stillae] colorem, non imaginem ducunt*.

40 *Meteor.* 373b17–31: ἐπεὶ δὲ καὶ δῆλον καὶ εἴρηται πρότερον ὅτι ἐν τοῖς τοιούτοις ἐνόπτροις τὸ χρῶμα μόνον ἐμφαίνεται, τὸ δὲ σχῆμα ἄδηλον, ἀναγκαῖον, ὅταν ἄρχηται ὕειν καὶ ἤδη μὲν συνιστῆται εἰς ψακάδας ὁ ἐν τοῖς νέφεσιν ἀήρ, μήπω δὲ ὕῃ, ἐὰν ἐξ ἐναντίας ᾖ ὁ ἥλιος ἢ ἄλλο τι οὕτω λαμπρὸν ὥστε γίγνεσθαι ἔνοπτρον τὸ νέφος, καὶ τὴν ἀνάκλασιν γίγνεσθαι πρὸς τὸ λαμπρὸν ἐξ ἐναντίας, γίγνεσθαι ἔμφασιν χρώματος, οὐ σχήματος. ἑκάστου δ' ὄντος τῶν ἐνόπτρων μικροῦ καὶ ἀοράτου, τῆς δ' ἐξ ἁπάντων αὐτῶν συνεχείας τοῦ μεγέθους ὁρωμένης, ἀνάγκη συνεχὲς μέγεθος τοῦ αὐτοῦ φαίνεσθαι χρώματος· ἕκαστον γὰρ τῶν ἐνόπτρων τὸ αὐτὸ ἀποδίδωσι χρῶμα

Aristotle underlines the very small size of these reflecting drops several times (ἡ δ' ἀνάκλασις ἀπὸ τῶν μικροτάτων μὲν συνεχῶν δὲ γίγνεται ῥανίδων, 374a33–34). Seneca provides a similar explanation as to how the many mirrors and reflections give one single appearance:[41]

> Accordingly the countless drops carried down by the falling rain are so many mirrors and contain so many images of the sun. To the observer facing them these images appear confused, and the spaces between individual reflections cannot be discerned, since distance prevents them from being told apart. As a result, instead of individual images a single, confused image is visible from all of them.[42]

This drop theory seems to be typically Aristotelian.[43] The only feature Philodemus has not taken over from him seems to be the theory of visual rays. In this respect he remains loyal to the Epicurean doctrine of the visual *eidōla*, but apart from that he fully applies Aristotle's optical mechanism of the drop theory to his case. This is the reason for his insisting on the small size of the mirror (col. 9, 5–6: τοῦ μὲν κα|τόπτρου τελέως μικροῦ φαινομένου) and the distinction we noted before between the god's shape and his colour. Thus I believe that here once again Philodemus is reusing and reworking concepts and explanations originally devised in the Peripatetic school.[44] This time he turns them around, not to prove his case, but to explain his opponent's error.

τῷ συνεχεῖ. ὥστ' ἐπεὶ ταῦτ' ἐνδέχεται συμβαίνειν, ὅταν τοῦτον ἔχῃ τὸν τρόπον ὅ τε ἥλιος καὶ τὸ νέφος καὶ ἡμεῖς ὦμεν μεταξὺ αὐτῶν, ἔσται διὰ τὴν ἀνάκλασιν ἔμφασίς τις.

41 The translation and interpretation follow Williams 2012, 72–73. The passage is followed by *Aristoteles idem iudicat*. Kidd 1988, 499, takes the whole theory from 1, 3, 5–8 as Aristotelian.

42 *QN* 1, 3, 6: *Ergo stillicidia illa infinita quae imber cadens defert, totidem specula sunt, totidem solis facies habent. Hae contra intuenti perturbatae apparent, nec dispiciuntur interualla quibus singulae distant, spatio prohibente discerni; deinde pro singulis apparet una facies turbida ex omnibus*.

43 Compare for instance Posidonius, who thinks that the rainbow is caused by the sun being reflected in a concave cloud (frs. 15 and 134 Edelstein-Kidd).

44 If he was not reading Aristotle directly, he was most certainly resorting to a well informed doxographic tradition. Gross 1989, 323, excludes Seneca's direct use of Aristotle's writing in most cases and supposes Posidonius, Asclepiodotus, doxographical handbooks and contemporary authors as his main sources (325). Earlier parts of this tradition may have been available to Philodemus as well.

4 The motion of the gods

The star gods reappear in the next column at the beginning of Philodemus' next chapter, on the motion of the gods. While Aristotle moves from the motion of the stars – viz. the star gods – to their proper place (*Cael*. 293a11–14), the Epicurean treatment follows the inverse order: both Cicero in his refutation of Epicurean theology and Philodemus start with the gods' whereabouts and continue with their locomotion.[45] The problem Philodemus will have to face, once he has accepted the principle of the proper place, is the same Aristotle discusses in *On the Heavens*: if we conclude that in order to preserve their everlasting nature the gods must reside in the place most suitable to them, can we ever conceive them to be moving, in so far as this implies leaving this very place and proceeding to another? Aristotle deals with this question in his discussion about the movement of his divine stars. In the light of Aristotle's theory about the heavenly sphere that contains the divine stars in their proper place, as they revolve in constant motion around us, it becomes clear why Philodemus in between the traditional sequence of topics dealing with the gods' dwelling place and their motion inserts his refutation of the star gods: apart from the Epicurean gods only these have ever been credited with fulfilling both conditions for divine existence, as they are the only bodies to be said a) to always reside in their proper place and b) to still be in motion. It is exactly these two qualities that Philodemus is trying to claim for the Epicurean gods, while at the same time he is attempting to deny the divine quality to their Peripatetic rivals.

In *On the Heavens* Aristotle introduces again the principle of the proper place, this time in a compromise version between the physical and the biological position. He holds that it is detrimental for every living being if its elements are not in their proper place:

> Instances of loss of power in animals are all contrary to nature, e.g. old age and decay, and the reason for them is probably that the whole structure of an animal is composed of elements whose proper places are different; none of its parts is occupying its own place.[46]

45 Cic. *ND* 1, 104: *quaero igitur vester deus primum ubi habitet, deinde quae causa eum loco moveat, si modo movetur aliquando*, Phld. *D.* 3, col. 8, 13 τ̣ο̣[ὺς] τόπους, ἔνθ' ε[ἰ]σὶν ο̣ἱ θεο[ί], col. 10, 6–7: περὶ τοίνυν κινήσεως | θεῶν ὧδε χρὴ γινώσκειν.

46 Arist. *Cael*. 288b15–18: καὶ γὰρ αἱ ἐν τοῖς ζῴοις ἀδυναμίαι πᾶσαι παρὰ φύσιν εἰσίν, οἷον γῆρας καὶ φθίσις. ὅλη γὰρ ἴσως ἡ σύστασις τῶν ζῴων ἐκ τοιούτων συνέστηκεν ἃ διαφέρει τοῖς οἰκείοις τόποις· οὐθὲν γὰρ τῶν μερῶν ἔχει τὴν αὐτοῦ χώραν. The translation follows Guthrie 1953.

It is clear then that neither the gods themselves as a whole nor their single elements must ever be in or come to a place not suitable to them. Aristotle solves the problem by introducing circular motion, thus making the stars move from one suitable place to another. In this way, they are constantly moving without ever leaving their proper place:

> It (*scil.* the divine) is too in unceasing motion, as is reasonable; for things only cease moving when they arrive at their proper places, and for the body whose motion is circular the place where it ends is also the place where it begins.[47]

Some aspects of the underlying cosmology had already been attacked by previous Epicureans. For example the question of the movement or rest of the outer rim of the cosmos and the fixed stars is discussed in Epicurus' *Letter to Pythocles* and by Lucretius. In these arguments, references to Aristotle's *On the Heavens* and Theophrastus have been detected by Mansfeld.[48] According to Aristotle we may infer the existence of imperishable beings from eternal spatial motions, as we observe them in the case of the universe turning round itself and in the case of the eternal motion of the fixed stars and planets. The basic tenet of this part of Peripatetic cosmology may be summarised as follows: "a body which moves in a circle is eternal and is never at rest".[49] Philodemus, following the Epicurean tradition, attacks the idea of the eternal and circular movement of the gods:

> for it should neither be thought that they (*scil.* the gods) have no other occupation than travelling forever through infinity, nor [...] nor is he happy who is coiling his way all his life. Nor should it be thought that they are motionless. For such a thing is not even conceived as a living being (col. 10, 7–13).

The argument against the eternal motion of the gods resorts to the notion of a god as a blessed and immortal living being (ζῶιον ἄφθαρτον καὶ μακάριον), but in the

47 Arist. *Cael.* 279b1–3: καὶ ἄπαυστον δὴ κίνησιν κινεῖται εὐλόγως· πάντα γὰρ παύεται κινούμενα ὅταν ἔλθῃ εἰς τὸν οἰκεῖον τόπον, τοῦ δὲ κύκλῳ σώματος ὁ αὐτὸς τόπος ὅθεν ἤρξατο καὶ εἰς ὃν τελευτᾷ. See also Aristotle's argument, why the outer rim of the heaven must be eternal at *Metaph.* 1072a21–23: καὶ ἔστι τι ἀεὶ κινούμενον κίνησιν ἄπαυστον, αὕτη δ' ἡ κύκλῳ (καὶ τοῦτο οὐ λόγῳ μόνον ἀλλ' ἔργῳ δῆλον, ὥστ' ἀΐδιος ἂν εἴη ὁ πρῶτος οὐρανός). Other references to eternal motion are collected by Elders 1972, 161 *ad loc.*.

48 Epic. *Ep. Pyth.* 92–93, Lucr. 5, 509–518. For a comparision with Aristotle's *On the Heavens* and Theophrastus see Mansfeld 1994, 41–45 [249–252].

49 *Metaph.* 1073a31–32: ἀΐδιον γὰρ καὶ ἄστατον τὸ κύκλῳ σῶμα. Aristotle continues: δέδεικται δ' ἐν τοῖς φυσικοῖς περὶ τούτων, presumably referring to *Phys.* 261b27–266a10; *Cael.* 268b11–269b17; 286a3–290b12.

second part it also takes in a biological perspective, which in turn is also found in Aristotle: the gods need to move in some way, because movement is a necessary property of a living being: "for the animal is sensible and cannot be defined without motion".[50]

In addition I would like to consider another passage, from Aristotle's *On the Heavens*, which may help explain a rare word in Philodemus. In fact, when talking about the eternal motion of the heavenly bodies, Philodemus describes the movement of the planets using the verb ῥυμβωνάω 'to coil one's way'. It is attested only in the ancient lexica by Hesychius, Photius, Suda and Zonaras and seems to denote the loops of the outer planets during the periods of retrograde motion.[51] The parallel description of the everlasting movement of the universe is the juncture αἰῶν᾽ ὁδεύ[ε]ιν 'to travel eternally' which apparently answers a specific passage in Aristotle's *On the Heavens*. Its general context is very similar to Philodemus' argument: there Aristotle is first describing the region outside our world, as Philodemus was dealing with the gods' realms in the *intermundia*, and in a second step both Philodemus and Aristotle address the question of the gods' motion. In between, however, Aristotle inserts an excursus on the definition and etymology of the αἰών. I suggest it was this passage that inspired Philodemus in the use of his metaphorical expression.

> Changeless and impassive, they have uninterrupted enjoyment of the best and most independent life for the whole aeon of their existence. Indeed, our forefathers were inspiered when they made this word, aeon. The total time which circumscribes the length of life of every creature, and which cannot in nature be exceeded, they named the aeon of each. *By the same analogy also the sum of existence of the whole heaven, the sum which includes all time even to infinity, is αἰών, taking the name from ἀεὶ εἶναι ('to be everlastingly'), for it is immortal and divine*.
>
> And (according to the more popular philosophical works) the foremost and highest divinity must be … in unceasing motion, as is reasonable; for things only cease moving when they arrive at their proper places, and for the body whose motion is circular the place where it ends is also the place where it begins.[52]

50 Arist. *Metaph*. 1036b28–29: αἰσθητὸν γάρ τι τὸ ζῷον, καὶ ἄνευ κινήσεως οὐκ ἔστιν ὁρίσασθαι.

51 On this meaning see Essler 2012, 265–266 ad loc.

52 *Cael*. 279a11–279b3: διόπερ οὔτ᾽ ἐν τόπῳ τἀκεῖ πέφυκεν, οὔτε χρόνος αὐτὰ ποιεῖ γηράσκειν, οὐδ᾽ ἐστὶν οὐδενὸς οὐδεμία μεταβολὴ τῶν ὑπὲρ τὴν ἐξωτάτω τεταγμένων φοράν, ἀλλ᾽ ἀναλλοίωτα καὶ ἀπαθῆ τὴν ἀρίστην ἔχοντα ζωὴν καὶ τὴν αὐταρκεστάτην διατελεῖ τὸν ἅπαντα αἰῶνα. Καὶ γὰρ τοῦτο τοὔνομα θείως ἔφθεγκται παρὰ τῶν ἀρχαίων. Τὸ γὰρ τέλος τὸ περιέχον τὸν τῆς ἑκάστου ζωῆς χρόνον, οὗ μηθὲν ἔξω κατὰ φύσιν, αἰὼν ἑκάστου κέκληται. *Κατὰ τὸν αὐτὸν δὲ λόγον καὶ τὸ τοῦ παντὸς οὐρανοῦ τέλος καὶ τὸ τὸν πάντα χρόνον καὶ τὴν ἀπειρίαν περιέχον τέλος αἰών ἐστιν, ἀπὸ τοῦ αἰεὶ εἶναι τὴν ἐπωνυμίαν εἰληφώς, ἀθάνατος καὶ θεῖος*. … καὶ γάρ … τὸ θεῖον … ἄπαυστον δὴ κίνησιν κινεῖται εὐλόγως· πάντα γὰρ παύεται κινούμενα ὅταν ἔλθῃ εἰς τὸν οἰκεῖον

My impression is then that both terms are intended to ridicule Aristotelian doctrine: ῥυμβωνάω seems to compare the movement of the divine planets to the coiling of a serpent, while αἰῶν᾽ ὀδεύ[ε]ιν points to the tiresome aspect of a never ending march, which would be quite inappropriate for a blessed star god.

5 The perception of the moving gods

The next argument put forward by Philodemus is a crucial passage in Epicurean theology. For my present purpose, however, I am not going to discuss its implications on the problem of the physical constitution of the Epicurean gods.[53] Instead I shall try to show its dependence on Aristotelian terminology and thought. Apart from the circular movement, Philodemus also denies another kind of movement to the gods: they are not moving by appearance in the way reflections or flames do, which are continuously created one after the other in subsequent places. In this case he seems in line with Aristotle's description of the eternal gods: "All things which change have matter, but different things have different kinds; and of eternal things such as are not generable but are movable by locomotion have matter; matter, however, which admits not of generation, but of motion from one place to another".[54]

According to Philodemus the reason for this is that for objects perceived by the mind (λόγῳ θεωρούμενα) there can be no different cause (αἰτία) for every single perception of an object. Otherwise the object perceived would not be numerically one and the same (ἕν καὶ ταὐτὸ κατ᾽ ἀριθμόν, col. 10, 18–21).

The first thing to be noted is the concept of numerical identity. It takes up two definitions by Aristotle, the definition of the one, and the definition of the same. In his *Metaphysics* Aristotle distinguishes four cases of the ἕν:

> Again, some things are *one numerically*, others formally, others generically, and others analogically; *numerically, those whose matter is one*; formally, those whose definition is one; generically, those which belong to the same category; and analogically, those which have

τόπον, τοῦ δὲ κύκλῳ σώματος ὁ αὐτὸς τόπος ὅθεν ἤρξατο καὶ εἰς ὃν τελευτᾷ. On the etymology ἀπὸ τοῦ αἰεὶ εἶναι see Elders 1966, 147 ad loc. I follow Merlan 1967, 486, in identifying Aristotle's description of the gods dwelling in the place outside the heavens with his description of the unmoved mover's life in his *Metaphysics*. Elders 1966, 143, holds there is no reference to an unmoved mover in this passage.

53 For these see Essler 2011a, 217–227; Wigodsky 2007.

54 Arist. *Metaph*. 1069b24–26: πάντα δ᾽ ὕλην ἔχει ὅσα μεταβάλλει, ἀλλ᾽ ἑτέραν· καὶ τῶν ἀϊδίων ὅσα μὴ γενητὰ κινητὰ δὲ φορᾷ, ἀλλ᾽ οὐ γενητὴν ἀλλὰ ποθὲν ποί.

> the same relation as something else to some third object. In every case the latter types of unity are implied in the former: e.g., all things which are one numerically are also one formally, but not all which are one formally are one numerically.[55]

Our case is the first, the identity of substance. Likewise sameness is divided into three subcategories: something may be the same numerically, in form or in kind:

> 'Identity' has several meanings. (a) Sometimes we speak of it in respect of number. (b) We call a thing the same if it is one both in formula and in number, e.g., you are one with yourself both in form and in matter; and again (c) if the formula of the primary substance is one, e.g., equal straight lines are the same, and equal quadrilaterals with equal angles, and there are many more examples.[56]

From the *Topics* we learn that everything which is numerically one (ἀριθμῷ ἕν) is also numerically the same (ἀριθμῷ ταὐτό), but not vice versa.[57] In *De anima* he denies numerical identity to anything that is perishable.[58] With these definitions Aristotle investigates several problems, for example the question, whether the water of the sea remains always the same numerically or the same in its form:

> Does the sea always remain numerically one and consisting of the same parts, or is it, too, one in form and volume while its parts are in continual change, like air and sweet water and fire? All of these are in a constant state of change, but the form and the quantity of each of them are fixed, just as they are in the case of a flowing river or a burning flame.[59]

To illustrate the alternatives Aristotle puts forward two examples of objects that remain the same only in form, but not numerically. The first example, flowing

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55 *Metaph*. 1016b31–36: ἔτι δὲ *τὰ μὲν κατ' ἀριθμόν ἐστιν ἕν*, τὰ δὲ κατ' εἶδος, τὰ δὲ κατὰ γένος, τὰ δὲ κατ' ἀναλογίαν· *ἀριθμῷ μὲν ὧν ἡ ὕλη μία*, εἴδει δ' ὧν ὁ λόγος εἷς, γένει δ' ὧν τὸ αὐτὸ σχῆμα τῆς κατηγορίας, κατ' ἀναλογίαν δὲ ὅσα ἔχει ὡς ἄλλο πρὸς ἄλλο. ἄλλο πρὸς ἄλλο. ἀεὶ δὲ τὰ ὕστερα τοῖς ἔμπροσθεν ἀκολουθεῖ, οἷον ὅσα ἀριθμῷ καὶ εἴδει ἕν, ὅσα δ' εἴδει οὐ πάντα ἀριθμῷ. Cf. *Metaph*. 999b34 and 1016b9; *GA* 731b34.

56 *Metaph*. 1054a32–b2: λεγομένου δὲ τοῦ ταὐτοῦ πολλαχῶς, ἕνα μὲν τρόπον κατ' ἀριθμὸν λέγομεν ἐνίοτε αὐτό, τὸ δ' ἐὰν καὶ λόγῳ καὶ ἀριθμῷ ἓν ᾖ, οἷον σὺ σαυτῷ καὶ τῷ εἴδει καὶ τῇ ὕλῃ ἕν· ἔτι δ' ἐὰν ὁ λόγος ὁ τῆς πρώτης οὐσίας εἷς ᾖ, οἷον αἱ ἴσαι γραμμαὶ εὐθεῖαι αἱ αὐταί, καὶ τὰ ἴσα καὶ ἰσογώνια τετράγωνα, καίτοι πλείω. Cf. 1016a6; *Top*. 103a9–13.

57 *Top*. 103a23. The inversion is already excluded by the example of mathematical lines, which can be the same, but not numerically one, because they have no substance.

58 *De An*. 415b4–7 about animals: διὰ τὸ μηδὲν ἐνδέχεσθαι τῶν φθαρτῶν ταὐτὸ καὶ ἓν ἀριθμῷ διαμένειν ... διαμένει οὐκ αὐτὸ ἀλλ' οἷον αὐτό, ἀριθμῷ μὲν οὐχ ἕν, εἴδει δ' ἕν.

59 *Meteor*. 357b27–32: πότερον καὶ ἡ θάλαττα ἀεὶ διαμένει τῶν αὐτῶν οὖσα μορίων ἀριθμῷ ἢ τῷ εἴδει καὶ τῷ ποσῷ μεταβαλλόντων ἀεὶ τῶν μερῶν, καθάπερ ἀὴρ καὶ τὸ πότιμον ὕδωρ καὶ πῦρ. ἀεὶ γὰρ ἄλλο καὶ ἄλλο γίγνεται τούτων ἕκαστον, τὸ δ' εἶδος τοῦ πλήθους ἑκάστου τούτων μένει, καθάπερ τὸ τῶν ῥεόντων ὑδάτων καὶ τὸ τῆς φλογὸς ῥεῦμα.

water in a river, might remind us of one theory about the physical constitution of the Epicurean gods. According to some scholars the gods consist of streams of images which flow together from various places. Their constitution is thus analogous to that of a waterfall. More interesting, however, is the second example, a stream of fire (φλογὸς ῥεύμα). The same example is used by Philodemus and it is used in order to make the same point: the gods are not moving in the manner of reflections or flames ([ἐμ]φάσεις καὶ φ[λ]όγες, col. 10, 19), because the result would not be numerically one and the same (ἓν καὶ ταὐτὸ κα[τ'] ἀριθμὸν, col. 10, 23). Since to the best of my knowledge there is no other parallel for this idea, it seems plausible that what Philodemus has in mind is the text of Aristotle's *Metaphysics* here.

To sum up: it is of course impossible to prove that Philodemus had direct knowledge of the Aristotelian works referred to in the course of my paper, namely his *Metaphysics* and meteorological writings.[60] The arguments examined show however a strong familiarity both with the content and the terminology of these works. I believe that these two theological passages give us a rare glimpse on an aspect Philodemus does not betray in his other preserved writings: a sound training in physics and metaphysics, with a focus on Peripatetic doctrine. He was not only aware of his opponent's views, but he was able to rework and recombine them for his own purpose. By substituting the definition of the proper place in Aristotle's physics with the definition of the proper place in his biological writings, he paves the way for the idea of the *intermundia* as a safe residence for his gods. By transferring the Aristotelian drop theory of the rainbow to theology, he is able to explain the wrong beliefs in star gods, prominently held by the Peripatetics. He dwells on the paradox that arises when we impose Aristotle's doctrine of divine motion on living beings and he uses Peripatetic terminology, concepts and examples to save his own gods from the mere imaginary existence he had previously assigned to the Aristotelian divinity. This might seem like an idiosyncratic theory of space, but his use of previous sources is certainly in line with the method of his master.[61] After all, it is a piece of φυσιολογία whose value every Epicurean could acknowledge.

60 One might also compare Philodemus' final statement about the circumscribed place that the gods never leave in col. 11, 2–3 (ἔστιν μὲγ γάρ τις ὡρισμένος τόπος, ὃν | οὐκ ἐκβαίνει τὸν αἰῶνα τὰ στοιχεῖα) with Aristotle's distinction between the divine celestial element, which moves through an endless spatial path (τόπος), and the terrestrial bodies which each have their distinct and limited regions (πεπερασμένους … τόπους, *Meteor*. 339a26–27). Is this another case of recombining Aristotelian tenets?

61 Erler 2011, 21–22; 26–28.

Carlos Lévy

Roman Philosophy under Construction: the Concept of *Spatium* from Lucretius to Cicero

There are many ways of analysing the concept of space in Lucretius. The most obvious and frequent is to make comparisons with the texts of Epicurus dealing with this topic.[1] I have chosen another method, which is to investigate how this concept was inserted by the poet in the net of the Latin concepts he created within a *patrius sermo* which he thought was hardly capable of expressing abstract ideas. For this I have explored three paths:

- to evaluate Lucretius' degree of innovation with respect to the former Latin tradition;
- to analyse how the poet managed to transform *spatium* into a philosophical concept;
- to compare Lucretius' and Cicero's methods of expressing the concept of space.

1 Lucretius and his Roman predecessors

Etymology is not of great use for understanding this problem. There are many discussions about the origin of this word, but no sure conclusion,[2] if we except the certainty that there is no linguistic relation between *spatium* and the verb *patere*, which means 'to be opened'.[3] However it is impossible to affirm that what nowadays seems to be absurd to a distinguished professor of linguistics, was not considered in this way by many learned Romans. Conversely, it is not sure that the latter brought together *spatium* and *spes*, a parallel that seems to have a firmer linguistic ground. Why was this word chosen, and not *locus?* Simply because of the greater complexity and ambiguity of *spatium*, my hypothesis

1 Cf. especially D.L. 10, 40 – 44. 89; Epic. *Nat.* 2, col. 112, 11; col. 17, 17; col. 23, 4 Leone; *Nat.* 28, fr. 1, col. 1, 12; fr. 8, col. 3, 1 – 2; col. 4, 4 Sedley.

2 For the general discussion on this point, see Walde 1954[2], 568 – 569; Ernout-Meillet 1959[4], 639; de Vaan 2008.

3 The hypothesis of a derivation from the root 'span' was defended by de Saussure 1886, 285, while Bréal 1889, 3, defended the still more improbable hypothesis that *spatium* was a deformation of στάδιον. However, to the best of my knowledge, Egger 1888, 4, seems to have been the first to have established a link between *spatium* and *pateo*.

being that *spatium* as a general and philosophical Latin concept was a creation of Lucretius, which could not be easily accepted by other thinkers, and especially by Cicero.

1.1 Space before Lucretius: revolution or continuity?

I shall take as my point of departure the assumption that *spatium* carries the notion of a – determinate or indeterminate – *quantum*, which can only be applied to space and/or time. Of course, for us, the concept of 'space-time' is one of the most evident, but it cannot be asserted without verification that it was always so in the Latin language. This *quantum* is often perceived as the receptacle of virtual actions, so that to have *spatium* can mean to have the ability to do something.

When Lucretius complains about the *egestas patrii sermonis*,[4] does it mean that before him there was no general use, no theorisation of the concept of space in Latin thought and literature? In fact, in the Latin literature of the second century BC we find a significant number of references to *spatium* which deserve to be commented upon.

Before Lucretius, the word occurs mainly in two kinds of texts.

1.2

In Roman theatre, *spatium* is used mainly to express a length of time, and the possibilities that it offers. I shall give some few examples of it.

Let us cf. first Plautus, in which there are five occurrences of *spatium*, only one of which has a clear spatial meaning. In *Stichus* 30, the slave Pinacium, who dreams to take part in the Olympic games, says:

> *Sed spatium hoc occidit: brevest curriculo; quam me paenitet ...*

Spatium is here the spatial length of the track, a tiny place, too short to run in.

In *Mercator* 547–548, the old Demipho, thinking about what the future might have in store for him, evokes the pleasures he wants to enjoy, saying that since only a short space of life is left for him, he will sweeten it with pleas-

4 1, 139, 832; 3, 260.

ure and wine and love.[5] In *Captives* 743, the meaning of the word is the same, since the slave Tyndaris affirms that, even with a very long life, he would not have the time (*breve spatium est perferundi*) to endure all the punishments with which he was threatened.[6] A slightly different nuance can be seen in *Aulularia* 806 – 807, where *spatium* means the opportunity to do something. Lyconides, the *adulescens*, says he will give Euclio the *spatium* to find out about his deed from his daughter's maid:

> *nunc interim spatium ei dabo exquirendi*
> *meum factum ex gnatae pedisequa nutrice anu: ea rem novit.*

The results are even more significant in Terence, who is generally regarded as being far more intellectual than Plautus. The eight occurrences that we find in his plays all have a temporal meaning. Let us give one example of this use (*Phormio*, 703 – 704):

> *Spatium quidem tandem apparandi nuptias,*
> *vocandi, sacruficandi dabitur paullulum.*

The slave Gela, who is very busy, as slaves always are in Roman comedy, asks for some time, *spatium paullulum*, to prepare for the wedding, send out the invitations, and arrange the religious ceremony. Note that the author, in using *spatium*, often feels no need to specify *temporis* or *aetatis*, or *vitae*, which seems to show some evolution in comparison to Plautus.[7] In Terence, *spatium* is autonomous enough to mean not only time (*non habeo spatium ut de te sumam supplicium*),[8] but also, still more than in Plautus, the ability to do something during this quantum of time: *spatium solitudinis* is the possibility to remain alone in order to reflect on one's situation[9] and a *longum spatium amandi* a long moment during which the young man had the possibility to love his girlfriend.[10]

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5 Plaut., *Merc.* 547 – 8: *decurso spatio breve quod vitae relicuomst / voluptate, vino et amore delectavero.*

6 Cf. also Plaut. *Stich.* 81 – 82: *quid mi opust decurso aetatis spatio cum meis / gerere bellum, quom nil, quam ob rem id faciam, meruisse arbitror?*

7 But there are also some exceptions, for instance cf. Ter. *Ad.* 860 – 61: *quod nunc mi evenit ; nam ego vitam duram quam vixi usque adhuc / iam decurso spatio omitto*, and *Hec.* 374 : *nam neque ut celari posset tempu' spatium ullum dabat.*

8 Ter. *Andr.* 623.

9 Ter. *Hec.* 130.

10 Ter. *Hec.* 684.

1.3

In other forms of poetry, two names are especially interesting for us.[11]

First of all, Ennius, who, as everyone knows, was Lucretius' poetical model. There are two verses by him, which we find in Cicero's *De senectute* 14, where the poet compares himself to a horse once victorious at Olympia:

> *Sicuti fortis equus spatio qui saepe supremo*
> *vicit Olympia, nunc senio confectus quiescit.*

What is this *spatium supremum?* Translations differ. Is it "the last moment" or something like "the last meters"? W.A. Falconer in the Loeb edition translates the expression as "the final lap". Of course, the meaning is essentially the same. However, the use of the adjective *supremum* seems to fit much better with a word meaning a period of time or a precise goal.[12] So it is probable that Ennius perceived *spatium* as a temporal notion.[13]

If we take a glance at Lucilius, who, through his *Satires*, can be considered as the prototype of the Roman poet-philosopher, the temporal sense is obviously present in a verse like this, on how easy it is to waste considerable resources:[14]

> *Magna penus parvo spatio consumpta peribit.*

But the use of *spatium* in this other passage seems to be quite different:[15]

> *Hunc milli passuum qui vicerit atque duobus*
> *Campanus sonipes successor, nullus sequetur*
> *maiore in spatio ac diversus videbitur ire.*

Obviously, with reference to "a clattering prancer from Campania", *maiore in spatio* must mean a longer distance, a longer course. This horse, though invincible over a rather short distance, would be reluctant to ride over a longer course. However we may note that *spatium* is used with a spatial meaning after the men-

11 See. M. Gale 2007.

12 Cf. Cat. *Carm.* 64, 149–151: *certe ego te in medio versantem turbine leti / eripui, et potius germanum amittere crevi, / quam tibi fallaci supremo in tempore dessem.*

13 Lucr. 6, 91 writes: *tu mihi supremae prescripta ad candida calcis / currenti spatium praemonstra, callida musa.* The *suprema calx* is here the last line and seems to confirm the difficulty to find *supremum* used with a distance.

14 Lucil. 60 Charpin.

15 Lucil. 15, 5 Charpin.

tion of a precise distance, as if the word was not adequate to express by itself a spatial quantity.

The conclusion at which I arrive is that in Latin texts before Lucretius *spatium* was mainly used to indicate a period of time. A form of intellectualisation of this notion appears in the fact that sometimes it stresses the possibilities that are offered for action. However, as we have seen, the occurrences with a clear local sense are quite rare. That can be explained by the existence of a concurrent term which is much more colloquial, *locus*. So, it seems that in pre-Lucretian Latin there was a rather clear separation between temporal aspects, or more precisely durative aspects, mainly expressed by *spatium*, and local aspects, for which *locus* was generally used. To give only one example, we find this verse in Terence, where we can see how *locus* is used where *spatium* could have been used if it had a clear local sense:[16]

> *Chaeream ⟨ei⟩ r⟨ei⟩*
> *praefecimus; dati anuli; locu 'tempu' constitutumst.*
>
> We put Chaerea in charge of arrangements, handed over our rings and settled a place and time.

Lucretius' innovation was precisely to give to *spatium* a local sense it seldom had before.

But before going back to Lucretius, I shall make one observation about Caesar. During the discussion of my paper, it was objected to me that the local meaning of *spatium* was quite present in Caesar, and that is perfectly true. However, as the most probable dates for Lucretius' death are 55 or 53 BC, while scholars generally believe that the *Commentaries* were written in 52 BC, it would be rather rash to posit an influence of Caesar on Lucretius. But the fact that both Lucretius and Caesar, in quite different areas, use *spatium* with its local meaning is not entirely devoid of interest, and not only because Caesar is considered to have been partial to Epicureanism.[17] Caesar was a warrior, Lucretius an Epicurean poet who asserted to have a firm knowledge of physical reality. In both cases, in military action as well in philosophical theory, the knowledge of reality required control over the frame in which its elements moved, as a supplementary sign of the rise of the 'raison de Rome' – both *logos* and power – well described by Claudia Moatti.[18]

16 Ter. *Eun.* 540 – 541.
17 Benferhat 2005, 233 – 311.
18 Moatti 1997, especially chapter 2.

2 Time and space in *De rerum natura*

2.1 Some statistics

The analysis of occurrences shows a clear majority of uses of *spatium* with a spatial meaning: 44 out of a total of 53, by my reckoning. It is worth remarking that most of the occurrences with a temporal meaning are to be found in the first two books, as if Lucretius needed some time to free himself from the literary tradition.

2.2 The temporal uses of *spatium*

Some remarks about these cases are called for, since they are important to understand the relation between time and space. In 1, 181–182, the expression *incerto spatio* is intended to show what great disasters would arise if generation *ex nihilo* were a reality. The rhythm of the seasons would not exist and vegetation as well as human beings would appear in an unpredictable way and would need no time to grow, since "youths would be made on a sudden frim small infants".[19] Here, *spatium* is nothing but the regular structure of time, obviously determined by the *foedera naturae*,[20] which preserves the animal kingdom from confusion. I think that it is somewhat imprudent to speak, as Berns and Luciani do,[21] of time as a metaphor of space, since such an assertion presupposes that *spatium* in this first book already has the modern sense of space, while, in fact, Lucretius is going to construct it. It is more plausible to interpret these first uses of *spatium*, in a temporal sense, as a sign of the adherence of the poet to the most frequent linguistic use of *spatium* in his time, that is to say as an interval of time. At the same time, the notion of *spatium* as it is used in this first book can be put in relation with the idea of measure that we find in Epicurus in connection to time.[22] It is in this way that I interpret the difficult verse 1, 234–236, about the *infinita aetas* that is behind us:

19 Lucr. 1, 186: *fierent iuvenes subito ex infantibus parvis* (transl. W.H.D. Rouse, Loeb Classical Library).

20 See Droz Vincent 1996.

21 Berns 1976 and Luciani 2000, 110.

22 On Epicurus' conception of time, cf. *Ep. Hdt.* 72–73, and on the measurement of time, *Nat. lib. inc.* (*PHerc.* 1413), fr. 5, col. 1 Cantarella-Arrighetti; S.E. *M* 10, 219.

Quod si in eo spatio atque ante acta aetate fuere
e quibus haec rerum consistit summa refecta,
immortali sunt natura praedita certe ...

But if through that space of time past there have been bodies from which this sum of things subsists being made again, imperishable indeed must their nature be ...

Most frequently, the verse is interpreted and translated as an hendiadys: "through that space of time past", and this is obviously the general sense. However, the use of *in eo spatio* can also be a Latin way of suggesting the Epicurean idea that we derive from the succession of days and nights, namely the idea of a measure of time.[23] *Tempus* can be thought of as a *spatium*, the Latin equivalent of the Greek *mēkos*, that is as a *quantum*, even when it is perceived in the infinite dimension of the past. Lucretius speaks here about the *infinita aetas ante acta*, in which things perish, without altering the everlasting nature of matter. But, in my opinion, *spatium* also suggests time seen from the point of view of measure (*metrētikon*), while the *acta aetas* is time from the point of view of events and life. This use of *spatium* in what we might call a 'metretical' meaning is present in the expression *brevi spatio* (2, 78; 4, 159. 161), and seems to me evident in 3, 773–775, which presents the absurd hypothesis that the soul fears to remain in an old body, which would "fall upon it, worn out with the long lapse of years":[24]

An metuit conclusa manere in corpore putri,
domus aetatis spatio ne fessa vetusto
obruat.

2.3 *Spatium* as an element of contrast between space and time

At the same time that he uses *spatium* to indicate intervals of time, Lucretius makes an effort to show that time and space are not the same thing, since the confusion of the two would be in perfect contradiction with Epicurean orthodoxy. We find the clearest examples of this distinction in the verses about *simulacra* (4, 191–193), the main characteristic of which is to cover a huge distance in a very short time:

23 About the many difficulties related to Epicurus' conception of time, see Morel 2002.
24 Cf 5, 827–830: [...] *ut mulier spatio defessa vetusto. / Mutat enim mundi naturam totius aetas / ex alioque alius status excipere omnia debet, / nec manet ulla sui similis res.*

> *Qua propter simulacra pari ratione necessest*
> *Inmemorabile per spatium transcurrere posse*
> *Temporis in puncto* ...
>
> Wherefore the images in like manner must be able to run through space inexpressible by words in a moment of time ...

The contrast between *inmemorabile per spatium transcurrere* and *temporis in puncto* is clearly grounded on the intention of expressing the difference between time and space by poetic means.[25] Although time and space are both infinite, an infinitesimal quantity of time can be enough to cover a very long distance. Epicurus, in *Ep. Hdt.* 46, writes about the same topic:[26] "Moreover the lack of obstruction from colliding bodies makes motion through the void achieve any imaginable distance in an unimaginable time". Lucretius' translation is accurate and *spatium* is an equivalent of *mēkos*; but *mēkos* is a secondary concept, here subordinated to that of void, while *spatium* becomes a central concept in Lucretius' thought. We found the same kind of expression in 4, 178, always in relation to *simulacra: longo spatio ut brevis hora teratur*, a rather strange expression, in which space appears as the active element. Rouse-Smith's translation, "a brief time is spent over a long space", is not convincing since it omits the fact that *tero* has a sense much more concrete than 'to spend', while the ablative *spatio* cannot be interpreted as expressing the distance travelled. Of course this could be considered as a metaphoric use and a poetic license, but in my opinion it is a supplementary proof of Lucretius' will to give to the concept of *spatium* an importance that it had neither in the Latin language nor in Epicurus.

At a different level, one can note that, in the fifth book of *De rerum natura*, the forest is not only the place where primitive mankind lived but also the active factor contributing to the transformation of wandering hordes into a more civilized entity. *Silva* is presented as a living element, with, for example, thunder enabling the discovery of fire, which created real possibilities for a positive evolution of humanity, without any intervention of a providential man. When Cicero had to translate *hylē*, he had the choice between two words, quite close to one another, which he used together in his rhetoric treatises:[27] *silva* and *materia*. He chose the latter, which better suggested the passivity of the Academic-Stoic *hylē*. In Lucretius, on the contrary, space, either empty or occupied, is a perma-

25 On the minimal parts of time, see Verde 2009.

26 D.L. 10, 46, transl. Long / Sedley T. 11D: ἡ διὰ τοῦ κενοῦ φορὰ κατὰ μηδεμίαν ἀπάντησιν τῶν ἀντικοψόντων γινομένη πᾶν μῆκος περιληπτὸν ἐν ἀπερινοήτῳ χρόνῳ συντελεῖ.

27 On this point, see Malaspina 2006 and Lévy 2013.

nent place of movement and display of forces. As such it cannot be represented as an essentially quiet reality.

2.4 Space, void and place

2.4.1 Position of the problem

Epicurean orthodoxy with regard to these concepts is quite simple, at least in principle. I shall not embark here on a detailed discussion of Sextus' testimony (*M* 10, 2) on the 'intangible substance', *anaphēs ousia*, and the three modalities of designating it: place (*topos*), *chōra* (room) and *kenon* (void).[28] As it is well known, Long and Sedley wrote that Epicurus was the first to isolate the concept of space in its broadest sense.[29] One cannot disagree with them, with however a little nuance: 'space' is a Latin term. In other words, one may wonder if the Lucretian concept of *spatium* was a mere copy of Greek terms and, if so, of which. Epicurus used mainly *kenon*, but it is *spatium* which survived as the most general concept, since space can be occupied or empty. If we admit that *spatium* is the equivalent of *chōra*, and this is not evident, the paradox is that the word that survived in the Western scientific and philosophical tradition is the one that corresponds to the term less used by Epicurus. What happened between Greek and Latin and what was Lucretius' role exactly?

2.4.2 An orthodox Lucretius?

Verses 1, 419 – 444 were considered by Long and Sedley as a major testimony about the Epicurean concept of space.[30] There are however some differences. For example, Lucretius avoids here, as in the rest of his work, the use of the concept of *anaphēs physis*, of which Algra said – rightly in my opinion – that it was more general than *kenon* and allowed Epicurus to avoid some of the objections

28 For a clear and convincing discussion of this text, see Algra 1994, 53 – 58.

29 Long / Sedley 1987, 1, 30: "We can now see that Epicurus is wise not to single out void in the strict sense of unoccupied space as the second permanent constituent of the world alongside body; for unoccupied space is not permanent, but can turn into occupied space at any time. By choosing instead space in the broadest sense – a notion which he is arguably the first ancient thinker to isolate – he ensures the permanence of the second element".

30 Long / Sedley 1987, T. 5B.

Aristotle had directed against the early Atomistic concept of *kenon*.[31] In fact, Lucretius considers intangibility not as the most general concept, within which others are subsumed, but as a property of void. That is clearly stated in verses 1, 437–439, where, after having said that no third nature could be admitted, except void and body,[32] the poet defines tangibility and intangibility as essential proprieties of these realities. Let us cf. what he says about void:

> *Sin intactile erit, nulla de parte quod ullam*
> *rem prohibere queat per se transire meantem,*
> *scilicet hoc id erit, vacuum quod inane vocamus.*
>
> But if it shall be intangible, being unable to forbid anything to pass through it in motion at any point, undoubtedly, this will be what we call empty void.

The same centrality given to the concept of void is then found in 1, 334:[33]

> *quapropter locus est intactus inane vacansque.*
>
> wherefore void is an intangible and vacant place.

Lucretius' reluctance to admit explicitly that intangibility is the nature of void emerges in 3, 810–814, where the term *natura* is used for atoms, while for void he uses the more empirical expression: *quod manet intactum* (v. 814). In fact, there is an asymmetry between the very frequent use of *natura* for atoms on Lucretius' part and its rarity when he speaks of void. In 1, 363, the nature of void is said to remain *sine pondere* and in 1, 1080, not to resist bodies:

> *Quin, sua quod natura petit, concedere pergat.*

If the nature of void is to yield, Lucretius seems to be reverting to the position which was criticised by Aristotle in relation to the first Atomists. Algra says in a foot note about S.E. *M* 10, 222[34] that the attribution of *eixis* to the Epicurean void does not make the Epicurean void subject to the same objections as the Democritean void, since *eixis*, "as an essential attribute" of the void is opposed to *antitypia*, the essential characteristic of atoms, which causes them to *rebound*

31 Algra 1994, 54

32 Lucr. 1, 431–432: *Praeterea nil est quod possis dicere ab omni / corpore seiunctum secretumque esse ab inani.*

33 Smith's translation: "Wherefore there is intangible space, void, emptiness" is grammatically hard to accept. We follow Giussani and see no reason to reject this verse as not genuine.

34 Algra 1994, 55 n. 71.

upon collision. The opposition, says Algra, then seems to be between resistance and non-resistance: "the void does not yield in the sense of 'move back', but it lets the atoms go right through it". It is true that, as Algra himself has shown, Epicurus did not remain entirely faithful to his systematic unification of the different aspects of void under the concept of *anaphēs physis*. The problem is that, as we have seen, the concept of *intacta natura* is not present in Lucretius' poetry. That leads us to ask what relations may be found within this non-unified, or at least not clearly unified, constellation: void, place, space.

2.4.3 Lucretian concepts

If we follow Sextus in his account of Epicurus' theory, things are quite clear: void, room and place are three ways of denominating the same reality, the three aspects of the *anaphēs physis*, "since the same substance when empty of all body is called 'void', when occupied by a body is named 'place', and when bodies roam through it, becomes 'room'".[35] It can be admitted that, albeit with some nuances, this is a faithful account of Epicurus' theory of void and space, since it is confirmed by Aëtius.[36] Usener's suggestion of reading *topos* in *Ep. Hdt.* 40 as the most general concept might be interesting if it found a textual support.[37] Now for us the problem is to know if Lucretius' use of these terms is the same as his Master's. In fact, I shall endeavour to demonstrate that the poet gives greater importance to the concept of space than Epicurus.

2.4.4 Space and void

2.4.4.1 The problem of definition

In Lucretius the definition is always a definition of void, perceived as an empty place. So the first element of reference is place or space, and we shall have to examine the difference between these two terms. We shall provide some examples for it, but before that we wish to quote an interesting passage, dealing with the problem of the magnet, which we find in 6, 1005 – 1008:

35 S.E. *M* 10, 2.

36 Aët. 1, 20, 2 = Long / Sedley T. 5C.

37 To the best of my knowledge this suggestion was accepted by Long / Sedley T. 5 A. It seems at least difficult to give to *topos* in this passage a primacy that it has nowhere else.

> *Hoc ubi inanitur spatium multusque vace fit*
> *in medio locus, extemplo primordia ferri*
> *in vacuum prolapsa cadunt coniuncta, fit utque*
> *annulus ipse sequatur eatque ita corpore toto.*
>
> When this space is made empty and a large place becomes vacant between, at once the first beginnings of the iron gliding forward into the empty space fall in a body together, and the result is that the ring itself follows and passes in this way as a whole.

The whole passage is an explanation of the attraction of the magnet on the mass of iron. The verb *inanio* was used for the first time by Lucretius and remained quite rare in Latin literature. Here, it is clear that the most general concept is that of space which becomes *inane* by a process of emptying. The seeds flow out from the stone, provoking a current which blows away all the air that lies between the stone and the iron. In this context, *locus* appears as sector of space, defined by this operation.

2.4.4.2 *Locus*, *spatium* and *inane*

There are two tendencies in Lucretius, when he uses *locus* and *spatium* next to one another. The first one is to consider that a *locus* is a part of a *spatium*.[38] The clearest example of this orientation can be found in 1, 389 – 390, which describes the impossibility for the air to fill a space at any one time:

> [...] *nam primum quemque necessest*
> *occupet ille locum, deinde omnia possideantur.*[39]

But there are other verses where the difference between the two words is more difficult to define,[40] for example when the poet uses *locus ac spatium* to refer to the void:[41]

38 It is noteworthy that *regio* is always used with *locus*, for example *nec regione loci certa* in 2, 260, about the *clinamen* – but never with *spatium*.

39 The same meanings can be found in Lucr. 1, 520 – 523, where the plural *loca* indicates that a *locus* is an element of *spatium: Tum porro si nil esset quod inane vocaret, / omne foret solidum; nisi contra corpora certa / essent quae loca complerent quae cumque tenerent / omne quod est spatium, vacuum constaret inane.*

40 Lucretius himself in 1, 955 says about the *void: seu locus ac spatium, res in quo quaeque gerantur.*

41 Lucr. 1, 426.

tum porro locus ac spatium, quod inane vocamus,
si nullum foret, haut usquam sita corpora possent
esse neque omnino quoquam diversa meare.

Then further, if there were no place and space which we call void, bodies could not be situated anywhere nor could they move anywhere at all in different directions.

In fact, it seems that the same reality, *inane*, can be considered at the same time a *locus* and a *spatium*, according to two different points of view. *Locus* is used for the void as a frame in which the atoms are situated (*sita*), while *spatium* means the void as a place through which the atoms can move.[42]

Lucretius' role in the elaboration of the concept of *spatium* appears even more clearly by contrast with Cicero.

3 Cicero as a reluctant space-thinker

3.1 Cicero and temporal *spatium*

By contrast to Lucretius, Cicero seems to have been unable to think about space as a unified entity. Of course, there is a huge general gap between the two thinkers, since Lucretius was primarily a poet and Cicero an orator, but, even taking into account this difference, it seems clear that Cicero's perception of the word *spatium* could not coincide with the one of Lucretius.

It is interesting to cf. the meanings of *spatium* in the first treatise he wrote, the *De inventione*. *Spatium* is present, at least twice, in the definition of time, which he renounces to define *generaliter:* time is a part of eternity, with a precise indication of duration.[43] In the following paragraph, *spatium* is still present in the definition of the difference between time and occasion.[44] In the whole trea-

42 But *spatium* can also mean the quantum of a deviation, like in Lucr. 2, 219–220, about the *clinamen: incertisque locis spatio depellere paulum. / Tantum quod momen mutatum dicere possis.* When *spatium* means a quantum of distance, *locus* is used where normally Lucretius would have used *spatium*, for example in 4, 206–208 about the *simulacra: Quone vides citius debere et longius ire, / multiplexque loci spatium transcurrere eodem / tempore quo solis pervolgant lumina caelum?*

43 Cic. *Inv.* 1, 39: *tempus autem est – id quo nunc utimur, nam ipsum quidem generaliter definire difficile est – Pars quaedam aeternitatis cum alicuius annui, menstrui, diurni nocturnive spatii certa significatione.*

44 Cic. *Inv.* 1, 40: *occasio autem est pars temporis habens in se alicuius rei idoneam faciendi aut non faciendi opportunitatem. Quare cum tempore hoc differt: nam genere quidem utrumque idem esse intellegitur, verum in tempore spatium quodam modo declaratur, quod in annis aut in anno*

tise, we do not find any occurrence of *spatium* with the *meaning* of local space. In § 29, the definition of the *probabilis narratio* includes these elements: *si tempus idoneum, si spatii satis,* and *si locus op⟨p⟩ortunus ad eam rem qua de re narrabitur fuisse*, where obviously *tempus* means the occasion and *spatium* the duration.

Cicero seems to have remained fully faithful to the literary tradition that I tried to bring to the fore. It is only in the *De oratore*, written ten years after the *De inventione*, that the local meaning appears, but without overcoming the superiority of the chronological meaning. In some cases the spatial and the chronological meaning are so closely linked that it is impossible to determine which is the dominant one:

> *De orat*. 3, 7: *Fallacem hominum spem fragilemque fortunam et inanis nostras contentiones, quae medio in spatio franguntur et corruunt aut ante in ipso cursu obruuntur quam portum conspicere potuerunt.*
>
> Oh, how deceptive are the hopes that we humans cherish, how fragile are our fortunes, how vain our efforts, which are often smashed down and collapse, or sink, while still at sea, before the harbour has come into sight.

Does the metaphor of the ship begin with s*patium*, like in May and Wisse's translation? The presence of *aut* leads us to think that what we have here, in fact, are two different metaphors. The first one suggests – especially by the use of *corruunt* – the image of a building that collapses,[45] with a strong chronological nuance of *spatium*, while in the second one the word *cursus* has a clear spatial meaning. We could give many other examples of this conservative attitude of Cicero's, i. e. of his attachment to the chronological meaning of *spatium* or to very precisely defined spatial meanings, like when he says in the *Pro Murena: uno basilica spatio honestamur.*[46] Two more philosophical examples will confirm the difference between Lucretius and him.

In Velleius' Epicurean speech from the *De natura deorum*, *spatium* is used, in a polemical way, in a critique of the artificialist paradigm. For Velleius it is absurd to imagine that during this *ab infinito tempore aeternitas* the Stoic *pronoia* remained lazy. We then find one of the most difficult passages of the dialogue:[47]

---

aut in aliqua anni parte spectatur, in occasione ad spatium temporis faciendi quaedam opportunitas intellegitur adiuncta. We here see that for Cicero *spatium* does not suggest by itself the occasion to do something.

45 Cic. *Top*. 15: *aedes corruerunt*. Cicero never uses the verb *corruo* about ships.

46 *Mur.* 20.

47 *ND* 1, 22.

> *Sed fuit quaedam ab infinito tempore aeternitas, quam nulla circumscriptione temporum metiebatur, spatio tamenqualis ea fuerit intellegi potes, quod ne in cogitationem quidem cadit ut fuerit tempus aliquod nullum cum tempus esset.*
>
> But there has been a certain eternity from infinite time past, which was not measured by any bounding of times, but which can be understood by its extent, because it is unthinkable that there should have been some time at which there was no time (translation Long-Sedley modified).

The argument is quite sophisticated. It seems that it can be analysed in this way:

a) it is absolutely impossible to admit that there was a time when time did not exist yet;

b) then it is impossible to think about the *aeternitas* that preceded the creation of the world;

c) however it is possible to have an idea of this eternity by imagining a huge space of time. We do not think that *spatium* has a precise local meaning here. More likely it means a quantum of time, as we can cf. in the second use of the word, *tam immensi spatio*.

The argument is quite specious, since there was in Stoicism no infinite gap between the *ekpyrōsis* and the *diakosmēsis*. But in our perspective it is interesting to note that *spatium* is still a length of time here.

3.2 Cicero's expression of void

The hypothesis that we find in Cicero a kind of transcription of Epicureanism in a language in which there is no reference to *spatium* as a spatial concept finds a confirmation in the descriptions which he gives of Epicurean physics. It appears, in fact, that he ignores the possibility of using *spatium* and *inane* as synonyms. For him there is only one dichotomy: atoms and void. Let us give some examples of it:

In *Fin*. 1, 17, he writes about atomic motion in the void:

> *ille atomos quas appellat, id est corpora individua propter soliditatem, censet in infinito inani, in quo nihil nec summum nec infimum nec medium nec ultimum nec extremum sit, ita ferri.*

The expression *infinitum inane*[48] is never used in Lucretius, who prefers to speak of *spatium infinitum* in 2, 1053. In 1, 968, it is noteworthy that the poet, to refute

48 Cicero uses *infinitio* in *Fin*. 1, 21, where he could have used *spatium infinitum*.

the absurd hypothesis of a finite space, uses some of the adjectives that are present in the Ciceronian paragraph, with the difference that the core of the argument is not *inane* but *spatium:*

> *Praeterea si iam finitum constituatur*
> *omne quod est spatium, si quis procurrat ad oras*
> *ultimus extremas iaciatque volatile telum …*

We may also note that in the *De fato*, which is one of the Ciceronian treatises in which the atomic theory is more precisely described, we do not find any occurrence of the concept of space. Let us cf. what is said about the *clinamen* (*Fat*. 47):

> *Nam neque extrinsecus inpulsam atomum loco moveri et declinare dicis, neque in illo inani, per quod feratur atomus, quicquam fuisse causae, cur ea non e regione ferretur, nec in ipsa atomo mutationis aliquid factum est, quam ob rem naturalem motum sui ponderis non teneret.*
>
> For you do not say that the atom moves its position and swerves owing to being driven by an external force, nor that there has been any factor in the void through which the atom travels to cause it not to travel in a straight line, nor that any change has taken place in the atom itself to cause it not to retain the natural motion of its own weight.

Obviously, Cicero decided to remain far from Lucretius' use of *spatium* as a major concept of Epicurean physics. There can be various explanations for this attitude. The one we prefer is that he had no personal or philosophical reasons to prefer Lucretius' innovations to the traditional literary meaning of the word.

Our conclusion will be brief. While one cannot deny that Epicurus' role was essential in suggesting the concept of space through the (sometimes rather confused) use of the words *chōra*, *kenon* and *anaphēs physis*, it is no less true that Lucretius, by his audacious use of *spatium*, created a notion that was at the same time effective in the teaching of Epicurean physics and easier to detach from the Epicurean context. Cicero, while highly conservative and far from the Lucretian innovations in his own use of *spatium*, will – *mutatis mutandis* – do something comparable by coining the notion of *voluntas* as a substitute for the many words used in Greek to mean the will.[49] Far from being a mere transcription of the Greek language, Roman philosophy by subtle shifts in meaning played a significant role in the definition of our own perception of philosophical problems.

49 The main difference is that Ciceronian *voluntas* replaces the many Greek words meaning 'will', while in Lucretius 'space' and 'void' coexist.

Richard Bett

Aenesidemus the Anti-Physicist

Sextus wrote at considerable length about physics; we have two sizeable books of his that are now usually called *Against the Physicists* (*M* 9 – 10), and more than half of the final book of *Outlines of Pyrrhonism* (*PH* 3) covers roughly the same ground as these two books, albeit more briefly. According to Sextus, Pyrrho's disciple and biographer Timon also wrote a book or books called *Against the Physicists* (*M* 3, 2). The point that Sextus says he is borrowing from this work has to do with the legitimacy or otherwise of proceeding from hypotheses, which (however congenial in general terms to Sextus' own Pyrrhonist outlook) has nothing specially to do with physics. But there is no reason to doubt the ascription, and in fact Sextus gives other evidence of an interest in physical topics on Timon's part; in his own *Against the Physicists*, and again in *Against the Musicians*, he attributes to Timon the assertion that no process divisible into parts, such as coming into being, perishing or the like, can take place in a time that itself has no parts (*M* 10, 197, *M* 6, 66). A fragment of Timon's own verse about Pyrrho, quoted in Diogenes Laërtius (9, 64 – 65), seems to suggest (and to regard as a reason for praise) that Pyrrho did not concern himself with questions about the nature of the world around us; if so, Timon's own involvement in physics may represent a departure from Pyrrho, and perhaps also a development in his own thinking. But there are in any case reasons for thinking that Timon did not simply parrot his teacher (if that is what Pyrrho should be called).

I mention these points in order to prepare for the thought that it would be in no way surprising if Aenesidemus – the founder of the sceptical movement to which Sextus later belonged, a movement that regarded itself as "philosophizing in the manner of Pyrrho" (Phot. *Bibl*. 169b26 – 27), but presumably relied above all on the writings of Timon for its understanding of what that meant – would also have engaged in discussion about topics in physics. One would not, of course, expect Aenesidemus to have offered physical theories of his own; rather, as a sceptic, he would be expected to have the goal of subverting confidence in the physical theories of others. And this is precisely what the evidence, limited as it is, suggests.

We do not hear of a book of Aenesidemus called *Against the Physicists*. But among the various sets of Modes summarized by Sextus is a set of eight Modes attributed to Aenesidemus and devoted to undermining all attempts at αἰτιολογία, causal explanation (*PH* 1, 180 – 186). In both the Stoics' and Sextus' divisions of philosophical subject-matter (D.L. 7, 132, *PH* 3, 13, *M* 9, 195), causation comes under physics; besides, a mention of "elements" (στοιχεῖα, *PH* 1, 183) in the

course of Sextus' extremely bare account of these Modes indicates that they were directed particularly against explanations in physics.

In addition, the summary of Aenesidemus' *Pyrrhonist Discourses* (Πυρρώνειοι λόγοι) in Photius (*Bibl.* 169b18 – 171a4) makes clear that a substantial portion of that work concerned physical matters, and that the purpose throughout was to create trouble for anyone trying to fashion positive theories in this area. After an overview of the main points of the first book, which appears, like the first book of Sextus' *PH*, to have been a general account of the Pyrrhonist outlook, Photius gives one-sentence summaries of the contents of each of the other seven books. The last three books had to do with ethical topics; but for each of the second to the fifth books Photius includes topics in physics, even if these are sometimes juxtaposed with topics that, at least in Sextus, count as part of logic (170b3 – 22). The second book, according to Photius, concerned (besides truth, a logical issue) causes and effects, motion, coming into being and perishing, "and their opposites" (170b6 – 7 – it is not clear what this might mean except as applied to motion). The third book dealt, again, with motion (in addition to sense-perception). The fourth book had to do with signs, which for Sextus, at least as a topic in its own right, falls under logic; but signs may of course be made use of in physical inquiry, and Photius also includes as part of the subject-matter of this book "the typical sequence of impasses about the whole of nature and the universe and the gods" (170b15 – 16). Finally, the fifth book is again said to deal with causes, attacking those who engage in αἰτιολογία; Photius also refers here to a set of Modes on this subject that are, we may assume, the same ones run through so telegraphically by Sextus.

To this we can add that Sextus' own *Against the Physicists* contains a few mentions of Aenesidemus. In some cases the reference is to "Aenesidemus in accordance with Heraclitus" (*M* 9, 337; 10, 216, cf. 233), and the question of what this means, and what such references can allow us to infer about Aenesidemus' own views, is a notoriously difficult one.[1] But we are also told of an argument employed by Aenesidemus to the conclusion that "nothing is a cause" (*M* 9, 218 – 226); there is no obvious connection with the styles of argument in the eight Modes concerning causation, but this further testifies to Aenesidemus' interest in the topic. Besides this, we are told that Aenesidemus employed a twofold distinction among types of motion (*M* 10, 38) – presumably in order to mount a critique of other philosophers' theories of motion, although this is not specified.

1 On this issue see most recently Schofield 2007, Hankinson 2010.

So we need not doubt that Aenesidemus involved himself in arguments about topics in physics. But now, was space or place one of these topics? I am not aware of any arguments about space or place specifically attributed to Aenesidemus by name, but the supposition is likely enough. We know from both Photius and Sextus that Aenesidemus dealt with the topic of motion (at some length, if its appearance in two different books in Photius' catalogue is to be believed). And in Sextus' *Against the Physicists*, the topic of motion comes immediately after that of place, while in the physical portion of *PH* place comes immediately after the various species of motion (in the broadest sense) plus rest. We should not, of course, assume that Aenesidemus treated his topics in the same order as Sextus does his; and in fact, Photius' catalogue suggests a rather different order of topics from either of Sextus', guided by no clearly discernible principle. But in both works of Sextus, the juxtaposition of motion and place is not merely accidental; there is an obvious conceptual connection between the two topics – if motion occurs, there must be such a thing as the place in which it occurs – and in both works he alludes to this in making the transition between them (*M* 10, 36, *PH* 3, 118). Given this connection, it is hard to believe that Aenesidemus, too, was not led to discuss place at least in the course of his discussions of motion – especially since one of the two types of motion that Sextus says Aenesidemus distinguished was "transitional motion" (μεταβατικὴ κίνησις, *M* 10, 38. 41), i. e., motion from place to place.

This, of course, does not take us very far. Can we get any closer to a sense of *what* Aenesidemus might have said about space or place? One of the Ten Modes, summarized somewhat differently by Sextus and Diogenes Laërtius and made use of or alluded to by several other authors, has to do with, in Sextus' description, "positions and intervals and places" (τὰς θέσεις καὶ τὰ διαστήματα καὶ τοὺς τόπους, *PH* 1, 118), and in Diogenes', with "distances and what kind of positions and places" (τὰς ἀποστάσεις καὶ ποιὰς θέσεις καὶ τοὺς τόπους, 9, 85 – Diogenes adds "and the things in the places", but as Annas and Barnes point out, this seems not to contribute anything significant).[2] Now, the Ten Modes have usually been regarded as deriving from Aenesidemus; not in the sense that he invented them from scratch – for, as is well known, much of the material in them can be traced back centuries before his time – but in the sense that he compiled this material into a systematic scheme of argument to be used for specifically sceptical purposes. Since Aenesidemus' authorship of the Ten Modes has been ques-

2 Annas / Barnes 1985, 101.

tioned in recent times,[3] I think it is worth rehearsing the reasons why the attribution is fundamentally sound.

In the surviving summary of the Ten Modes in Sextus, he ascribes them not to Aenesidemus, but to "the older sceptics" (*PH* 1, 36), by contrast with the "younger sceptics" (*PH* 1, 164) to whom he ascribes the Five Modes; since the terms "older sceptics" and "younger sceptics" have no precise reference, this tells us nothing beyond a relative chronology of the two sets. But in *Against the Logicians* (*M* 7, 345), during a mention of the deceptiveness of the senses, Sextus adds the following back-reference: "as we showed in going over the Ten Modes of Aenesidemus". Now, as Karel Janáček showed in his seminal article "Die Hauptschrift des Sextus Empiricus als Torso erhalten?",[4] the books that we now know as *Against the Logicians, Physicists* and *Ethicists* are the surviving portions of a work that must originally have included an opening, general treatment of Pyrrhonism, occupying the same status as *PH* 1 does in relation to *PH* 2 and 3; it is likely, then, that Sextus is referring back to a version of the Ten Modes in this lost part – that is, earlier in the same work – rather than to the version in *PH* 1. But either way, there is no reason to doubt the plain significance of Sextus' phrase "the Ten Modes of Aenesidemus"; and this is confirmed by the reference to Aenesidemus' Modes in the critique of Pyrrhonism by Aristocles of Messene (in Eus. *PE* 14, 18, 11), who is much closer to Aenesidemus' own time than is Sextus. Admittedly Aristocles refers to *nine* Modes, not ten. But there are many possible explanations of this discrepancy, and Aristocles' description of the content of these modes, compressed as it is, makes clear that what he is attributing to Aenesidemus is a version of the same material that appears as the Ten Modes in Diogenes and Sextus – including an argument based on "distances [ἀποστήματα] and sizes and motions" that looks like the Mode in which we are interested. That we are entitled, then, to think of the Ten Modes as "of Aenesidemus", in the sense explained, seems clear enough; thus far I am in complete agreement with Emidio Spinelli's recent discussion in his *Questioni scettiche*.[5]

But there is a little more to add, in confirmation both of a lost treatment of the Ten Modes by Sextus and of Aenesidemus' involvement with these Modes; here I must acknowledge a debt to David Sedley.[6] At one point in Diogenes' treatment of the Ten Modes, there is a mention of different orderings of these Modes by different authors; in the course of this Diogenes says: "[t]he ninth [that is, the ninth in his own ordering] Sextus and Aenesidemus put tenth; and the tenth Sex-

3 See Hankinson 1995, 120 – 121.

4 Janáček 1963.

5 Spinelli 2005, 30 – 31.

6 In his presentation to the 2007 Cambridge Mayweek seminar on Diogenes Laërtius book 9.

tus says is eighth" (9, 87). Now, Diogenes' tenth Mode, the mode of relativity, is indeed paralleled by the eighth Mode in Sextus' *PH* 1 treatment. But the ninth in Diogenes is also the ninth in *PH* 1, not the tenth. So either someone has made a mistake, or "Sextus and Aenesidemus" refers to a different treatment in the works of Sextus, a treatment in which, unlike in the version that we have, Sextus followed Aenesidemus' original ordering. Since we already have good reason to believe that there was a lost general portion of Sextus' longer work, and a general treatment of Pyrrhonism is just where one would expect to find an account of the Modes, I think we may accept the latter hypothesis; and the greater proximity to Aenesidemus in this longer work, as compared with the treatment of the Ten Modes in *PH* 1, may be taken as an indication that this work was composed earlier than *PH*, rather than later.

We have, then, two surviving versions of a Mode concerning place and related matters that can reliably be traced to Aenesidemus. It is here, if anywhere, that we can hope to find evidence of how Aenesidemus may have treated the topic of place. The question now is whether it is possible to discern from the surviving versions what Aenesidemus' own version of this Mode may have looked like. Sextus' and Diogenes' versions of the Mode differ considerably, but also share many elements. Sorting out the similarities and the differences is clearly the first step.

As we saw, both Sextus and Diogenes use three key terms to introduce this Mode, but they are not exactly the same. While both have "positions" (θέσεις) and "places" (τόπους), Sextus has "intervals" (διαστήματα) and Diogenes has "distances" (ἀποστάσεις). Both terms seem to have some support from earlier sources. Philo of Alexandria, whose reproduction of the Modes – albeit not under that title, and for a non-sceptical purpose – is the earliest that we have, uses precisely the same three terms as Sextus, in the same order (*Ebr.* 181). Since Philo is clearly not Sextus' source, this suggests a version of the Modes circulating prior to Philo – that is to say, not long after Aenesidemus' own time – on which Philo and, perhaps indirectly, Sextus drew, and in which these three terms formed the label for this Mode. On the other hand, as noted earlier, in what appears to be a brief allusion to this Mode, Aristocles uses the word ἀποστήματα. This may simply be a case of Aristocles reproducing inexactly a text for which he has great contempt, and of which he is in any case giving only a very cursory report. But it could also reflect the presence of a variant term in an early version of this Mode, and if so, Diogenes' ἀποστάσεις would not be much of a departure from this.

The next question is whether this difference of terminology is of any philosophical significance. Annas and Barnes say that Diogenes' ἀποστάσεις, "distances", is "slightly inaccurate", because not all the examples that fall under this

heading have to do with different appearances at different *distances*; Sextus' fuller version, they say, has an example in which the differing "intervals" (διαστήματα) are different *angles* from which something is viewed, not different distances.[7] But this seems to me problematic; however, the matter is complicated, and it will take a little while to untangle the issues.

In the example in question, which is indeed grouped with examples involving different διαστήματα, Sextus says: "the same colonnade when seen from one end appears tapering, but from the middle symmetrical from each side" (*PH* 1, 118).[8] I take it we are to imagine standing between a pair of parallel rows of columns. If we stand at one end of the rows, the columns will appear to be getting closer and closer together, in a single uniform sequence, as one runs one's eye along the rows from one end to the other; but if we stand in the middle of the rows and face in either direction, they will appear to be getting closer together, albeit to a somewhat lesser degree than in the first case, in two different and symmetrical sequences approaching both ends. Now, if this is the right way to read the example, then it involves *both* distances *and* angles or directions; in the second scenario one end looks different from how it looked in the first scenario, because of a difference in the distance, but in addition the entire colonnade has a symmetrical look because of being looked at (in two parts) from two opposite directions as opposed to being looked at (as a whole) from just one direction. Sextus, however, concentrates on the second aspect, referring to the symmetry in one scenario versus the tapering in the other. So although there is a way in which a difference of distance does figure in the example, what he draws attention to is not this, but a difference in angle(s) or direction(s).

The question now is whether the word διαστήματα can be understood to capture this aspect of the example. And however one translates it, it is difficult to see how it can be understood in this way. In general, διάστημα refers to the extent by which things *stand apart* from one another; this need not always be understood in spatial terms, and for this reason 'interval' may sometimes be preferable as a translation to 'distance' (as in the case of musical intervals, for example). But the word is not used indiscriminately of any kind of difference; there does need to be some kind of identifiable *gap* between the items separated by a διάστημα. And there just does not seem to be any such identifiable gap in the case of different angles or directions of viewing.

As noted a moment ago, although this example could be seen as, at least in part, one involving different distances or intervals, this is not the side of it that

7 Annas / Barnes 1985, 101.

8 Literally, 'from every side' (πάντοθεν). But there seem to be only two possibilities.

Sextus chooses to emphasize. And so, if I am right about the term διάστημα, it follows that this example is not in fact best situated under the heading of διαστήματα; it might better have gone under the heading of "places". It also follows that it is Sextus, not Diogenes, who is being "slightly inaccurate", since the relevant examples in Diogenes do exclusively involve differences of distance. And finally, it follows that there is no significant difference between the terms used by the two authors; even though διαστήματα can refer to intervals that are not physical distances, physical distances are the only thing that it could in fact refer to in this passage of Sextus. So while the evidence may favour this, rather than ἀποστάσεις, having been Aenesidemus' own term, nothing in our interpretation of the passage turns on this.

Aside from the precise terminology, what kinds of cases are collected under these three headings? With the exception of the case just discussed, Sextus organizes the data in an orderly manner, beginning with examples where the same thing appears different from different *distances* – that is, closer up or further away – then continuing with examples where the same thing appears different in different *places* – such as in water as opposed to in the air, indoors as opposed to outdoors, or (of eggs) inside a bird as opposed to laid – and ending with examples where the same thing appears different in different *positions* – such as flat versus upright, or turned in one direction versus another. Diogenes begins by listing a number of general ways in which things may present differing and seemingly conflicting appearances – big versus small, square versus round, etc. – and then gives a number of specific examples. The last two of these examples also appear in Sextus, both as cases of different appearances in different *positions:* the picture that appears flat when laid horizontally, but three-dimensional when upright and viewed as an image, and the dove's neck that appears differently coloured depending on which way it is turned. These are preceded in Diogenes by two cases of different appearances at different *distances* – mountains and the sun (though in the latter case, of course, we only have experience of the distant appearance)[9] – and two of different appearances in different *places* – the sun at different points in the sky, and the same body in the woods or in open country. Contrary to Annas and Barnes, then, who regard Diogenes' order-

9 The text is problematic at this point. The Greek says ὁ γοῦν ἥλιος παρὰ τὸ διάστημα ... φαίνεται – "the sun appears ... on account of the distance [note the word διάστημα]" but none of the manuscripts offer an intelligible epithet in the space I have left blank. Some have accepted the proposal μικρός, 'small'; Annas / Barnes 1985, 187–8 propose ποδιαῖος, 'a foot across'. In any case, we are told how the sun appears from afar, and it is merely implied, rather than stated, that it appears very different at close quarters.

ing as purely haphazard,[10] this seems to follow the same order as Sextus once we get to the specific cases, even if these are preceded by generalities that follow no clear pattern. In addition, most of Diogenes' general kinds of differences clearly recall, or at least clearly conform to, other examples in Sextus' account. Diogenes' big/small fits Sextus' boat that appears small (and stationary) when at a distance, but larger (and in motion) when close up; Diogenes' square/round recalls Sextus' tower that looks round at a distance but square close up; Diogenes' straight/bent recalls the oar that looks bent in water but straight outside it, one of Sextus' examples under "places"; and Diogenes' flat/with projections again recalls the picture, which, as just noted, appears later as one of Diogenes' own specific cases.

It seems reasonable to infer, then, that although a number of the specific examples in Diogenes do not appear in Sextus, and also vice versa – Sextus' colonnade does not appear in Diogenes, nor do several of Sextus' examples under "places", to which we will return – the original version of this Mode included a number of examples, sorted into groups according to each of the three main headings; and the examples most likely to have appeared in the original version are the ones that either occur directly in both Sextus and Diogenes or occur in Sextus and are suggested by Diogenes' opening generalities.[11] The most likely of all is the oar that looks straight in the air but bent in the water, since this also appears in Philo's version of this Mode. Aside from this, Philo's version is

10 Annas / Barnes 1985, 102.

11 It is striking that every item on this list – the picture, the bird's neck, the boat, the tower and the oar – also seems to have been used by the sceptical Academics in arguments against the possibility of Stoic apprehension (κατάληψις), arguments that proceed by casting doubt on the power of the senses. In a passage on this subject in Cicero's *Academica* (2, 79 – 82) we find the oar, the bird's neck and the boat; in a passage of Sextus' *Against the Logicians* (*M* 7, 411 – 414) summarizing Academic arguments against apprehension we find the picture, the tower, the oar and the boat. In addition, Cicero mentions the apparent size of the sun (*Ac*. 2, 82), which, as we saw, is also mentioned by Diogenes. Now, Aenesidemus was himself an Academic before breaking away to start the Pyrrhonist movement (cf. Phot. *Bibl*. 169b32 – 33). Although the use to which these examples are put in Aenesidemus' Mode is somewhat different from their Academic context, it is easy to suppose that he was familiar with these examples from his time in the Academy and chose to use them for his own purposes in this Mode. It is perhaps too much to say that examples that figure in one or other surviving version of this Mode and were also employed by the Academics are thereby more likely to have appeared in Aenesidemus' original version. But the fact that the Academics employed them at least shows that Aenesidemus would have had them ready to hand; if these examples largely correspond with the list of examples that seem on other grounds to be most likely to go back to Aenesidemus himself, that is no great surprise.

mostly confined to generalities rather than specific cases;[12] but one of these general points is that polygonal objects sometimes look round, which is reminiscent of Sextus' tower that looks square from close at hand but round from a distance.

At any rate, I think we have a fair idea of the flavour of the examples that Aenesidemus' Mode will have included. The next question is how these examples are supposed to produce a sceptical result. For a natural reaction to the phenomenon of diverse and apparently conflicting appearances, on these subjects as on any others, is "so what?". While conflicting appearances do at least present an issue, or a demand for explanation, there is no obvious reason why this should have sceptical consequences. As is well known, the oar that looks bent in water makes its first appearance in western philosophy in book 10 of Plato's *Republic*. The point here is to illustrate that the part of the soul that includes the senses is liable to being deceived, and therefore less reliable than the rational part. This may of course lead us to mistrust the senses on certain occasions, but since the senses are only one part of our cognitive apparatus, it does not push us towards any kind of generalized scepticism. The effect is not to make us wonder about how things really are; on the contrary, the verdict that the senses are sometimes deceived relies on a confidence that we do have a grasp of this, from another source that does not share the senses' limitations.

Again, Diogenes' examples of the sun looking different when rising and at its zenith, and of mountains looking "airy" (ἀεροειδῆ) at a distance, but not when close up, are paralleled by examples in a treatise on optics from the third century BC, preserved in fragmentary form in a papyrus in the Louvre (*PLouvre* 7733). The numerous cases of conflicting appearances cited in this work actually persuaded one editor to regard it as a sceptical text.[13] But this is a misconception; although the argument is extremely hard to make out in detail, the purpose of the treatise, at least in the part to which these surviving fragments belonged, was clearly to *explain away* various misleading appearances on the basis of an understanding of how certain optical phenomena come about. The author is not casting doubt on our ability to know how things are, but showing why things often look different from how they are, on the assump-

12 Annas / Barnes, 1985, 102 say that Philo's account clearly distinguishes the three main categories of appearances, though in a different order from Sextus. But they do not elaborate, and I must admit that I fail to see any clear pattern. However, Philo's version of this Mode will not concern us much longer, since it is not in fact sceptical at all; I return to this point just below, p. 150.

13 Lasserre 1975.

tion that we know very well how that is.[14] Philo's approach, too, in this Mode as in others, is to present a number of cases of what he assumes to be *deceptive* appearances; he takes it that we have a grasp of how things really are, and concentrates on showing the ways in which we can be led astray. The oar is a good example; in Philo's treatment this comes out as "Oars too, even if they are exceptionally straight, turn out to look bent under water". We are not here being invited to question whether the oar is really straight or bent, but to ponder the fact that it sometimes does not look straight even though it really is. This is why I said that, though Philo makes use of the material in the Ten Modes, his purpose in doing so is not sceptical. Finally, the case of the square or round tower of course derives from the Epicureans, who claimed in radically anti-sceptical fashion that "all appearances are true". As I understand this example (relying especially on Sextus, *M* 7, 208), what the Epicureans take to be true in this case is that the atomic images emanating from the tower and striking the sense-organs are indeed either round or square, depending on whether the tower is close or far away. If the tower is far away, the image, though starting out square – since it came from a square tower – has its corners worn off in transit, and so is in fact round by the time it reaches the viewer; but if the tower is close, the image does not have enough of a journey for this transformation to occur, and so it is still square when it confronts our senses. But whether or not this is the right way to read the example, the Epicureans were clearly not trying to subvert our grasp of how things really are, but to explain why things appear as they do by appeal to how they really are.

So what is it about the treatment of these examples in Sextus' and Diogenes' versions of this Mode that turns them in a sceptical direction? One point that sets these apart from the treatments of the same or similar examples mentioned in the previous paragraph is that all the appearances are considered on a par; there is no suggestion that some appearances are veridical and others not. This is obvious in Sextus, who scatters the word "appears" (φαίνεται) throughout this Mode, and who clearly and explicitly presents all the examples as cases of differing appearances – and no more than that. It is a little less obvious in Diogenes, because his examples are told in a more compressed form. But Diogenes starts his generalized examples by saying "things that seem large appear small" (τὰ δοκοῦντ' εἶναι μεγάλα μικρὰ φαίνεται), and all the generalized examples then

14 I have discussed this in detail in Bett 2007. On the first page of this article I say "To my knowledge this text has never before been discussed in English". I must confess that I failed to notice that Annas / Barnes 1985 include a brief discussion of it, including a translation of a few lines, in the course of their chapter on this very Mode (107); Annas / Barnes mention, but do not endorse, the sceptical interpretation.

depend on this same δοκοῦντ᾽ and φαίνεται; the specific examples that follow then all depend on another single φαίνεται.

But this still does not get us to anything sceptical unless some move is made that is supposed to prevent us from ever getting *beyond* the level of mere appearances. In Diogenes this comes in a single closing sentence: "Since, then, it is not possible to perceive these things apart from places and positions, their nature is not known". In Sextus' version of the Mode a similar juxtaposition of points appears twice. Having rehearsed all his examples, Sextus immediately adds "Since, then, all the things that appear are observed in some place and from some interval and in some position – each of which creates a lot of variation for the appearance, as we have indicated – we will be compelled through this Mode, too, to come to suspension of judgement" (*PH* 1, 121). And then in concluding his treatment of this Mode he says: "[w]e are perhaps able to say how each thing appears in terms of this position or this interval or in this place, but we are not able, because of what was said before, to reveal what it is like in its nature" (123). The two versions seem, then, to agree on two things: first, we never observe things *except* in some place or in some position or at some interval, and second, because of this limitation, we are not in a position to determine the *nature* of these things.

How, more precisely, is this supposed to work? Diogenes says nothing more, as if it were immediately clear how one gets from the first point to the second. Sextus, on the other hand, inserts an argument between the two passages that I just quoted (121–123). He imagines that contrary to his own rigorous even-handedness, someone tries to mount an argument to the effect that some of these appearances show us things as they really are, while others distort them. Against this, he argues that any such attempt would have to proceed with or without a demonstration (ἀπόδειξις). If there is no demonstration, then there is no reason why we should believe it. And if there is a demonstration, the veracity of that demonstration would itself be subject to demonstration, and so on. In other words, Sextus presents us with two of the Five Modes, those of hypothesis and infinite regress. Now the Five Modes, as noted earlier, are attributed by Sextus to an unnamed group of "later sceptics" – later, that is, than the purveyors of the Ten Modes. Hence this material cannot have appeared in the original version of the Mode in which we are interested; it must be a later importation by Sextus or his source. This kind of contamination of the Ten Modes by material from the Five Modes is not unusual in Sextus, but it never occurs in Diogenes' presentation of the Ten Modes. Although Diogenes' version of the Ten Modes is later than Sextus' – as we saw, it refers to it, and may in certain respects

be viewed as attempting to improve it[15] – it is in this respect clearly more faithful to the Ten Modes as originally devised by Aenesidemus.

We are back, then, with the connection suggested by both Sextus and Diogenes: we are not able to get clear on the nature of things, and this is because we only ever encounter things at some interval or in some place or in some position. And we need to explain this connection *without* relying on the argument, indebted to the Five Modes, that we find in Sextus. Now one possibility, of course, is that even if it was left to the "later sceptics" to put the arguments collected under the Five Modes into a systematic form, arguments of this type could nonetheless have been used by earlier sceptics when it suited them; so the fact that Sextus introduces an argument that bears on its face the signs of having been lifted from the Five Modes does not mean that such arguments could not have figured in earlier versions of this Mode, perhaps in a more informal guise. As is well known, Aristotle confronts what are clear ancestors of several of the Five Modes in defending his own account of the structure of a science against challenges in *Posterior Analytics* (1, 3); the Five Modes, just as much as the Ten, are compilations of previously existing material rather than wholesale inventions.

But this would not address one striking feature of Diogenes' and Sextus' concluding remarks quoted earlier. In both authors our failure to grasp the nature of things is said, or at least implied, to be *because of* the fact that we only ever experience things in specific places or positions or at specific intervals. The Five Modes are designed to address any case where we are presented with conflicting appearances, and in that sense Sextus is not ill-advised to introduce material from those Modes; it seems to be suited to derive a sceptical result from the phenomena offered for our consideration. But the Five Modes have nothing specifically to do with the idea that our cognitive limitations are due to the fact that things are always in some place or position or at some interval; yet that seems to be something that both surviving versions of the Modes make a

15 Especially when it comes to the ordering of the Modes; here again I am following some suggestions of David Sedley (see, p. 144 n. 6). The most important change is in the placing of the relativity Mode; as noted earlier, this is eighth in Sextus but tenth in Diogenes. Since this one is in a sense a generalization of the ten Modes as a group (as Sextus himself points out, *PH* 1, 38–39), it makes more sense to have it at the end than interspersed with much more specific Modes. Secondly, Sextus' tenth mode, on differences in ethical belief and practice, is placed fifth in Diogenes. The effect is to make all of the first five Modes focused on differences in observers; the first four (in both authors) are clearly of this kind, and in this respect (despite what Sextus says about it, *PH* 1, 38) the ethical Mode belongs with them. Another effect is that the remaining four (excluding the relativity Mode), all of which are more centered on differences in the objects observed, now form a separate and uniform group.

point to emphasize. And that suggests another way of understanding the argument, which may be closer to how Aenesidemus originally conceived it.

Annas and Barnes say "We find no unity in the Fifth Mode [i.e., in Sextus' ordering], and it might properly be regarded as a set of three distinct modes".[16] Although they are right that the divisions of subject-matter in the Ten Modes are to some extent arbitrary, this seems to me an exaggeration. This Mode has to do with, in a broad sense, *where* the object is located; interval or distance, place, and position are distinct types of issue under this broad heading, but there is an obvious connection among them. Annas and Barnes also say that the examples themselves are "a mixed bag" – mixed, that is, in terms of their level of persuasiveness – and that some of them "do not seem to produce any conflict at all". They point particularly to several examples in Sextus: eggs appear soft inside the bird and hard when laid, lyngurion (that is, lynx urine, which was supposed to congeal to form a kind of amber) appears liquid inside the lynx but hard in the outside air, and coral appears soft in the water but, again, hard in the outside air. And they say "It is absurd to wonder whether eggs are *really* hard or soft", and similarly absurd, *mutatis mutandis*, for the other cases.[17] But is this absurd? Or, to put it another way, should we assume that the examples were necessarily meant to produce *conflict* – which, as they rightly note, these do not appear to do? Trying to take these examples seriously may take us closer to understanding how the argument was supposed to work.

Recall that both Sextus and Diogenes seem to imply that our grasp of the nature of things is thwarted precisely by the fact that things are always in some place or position or at some interval from the viewer. Now this suggests that the nature of a thing would be the way the thing is independently of any place, position or interval (or any other particular circumstances, we might add – for this is just one Mode out of several). This nature would presumably be unaffected by the object's particular place, position or interval from the viewer at any given time, and so would be invariant, at least as far as those features are concerned (but again, this Mode is not the only one). The fact that things strike us differently when they are in different places or positions or at different intervals makes it particularly obvious that we do not have access to this invariant nature; it also suggests that the way they strike us in these different conditions is due to the influence of those conditions themselves – which just reinforces the point about our lack of access, since the things are bound always to be in some condition or other.

16 Annas / Barnes 1985, 102.
17 Annas / Barnes 1985, 103.

Now, how does this apply to the bird's eggs and related cases? The egg appears soft when inside the bird but hard after the bird has laid it. Obviously the egg is always in some place or other – either in the bird or outside it; and the character presented to us by the egg varies depending on which of these places it is in. But this means, according to the line of thought rehearsed in the previous paragraph, that it is not part of the egg's *nature* to be either soft or hard. A thing's nature does not vary with conditions, but the softness and hardness of the egg obtain only in certain specific conditions. Hence, if we are trying to make an inventory of the features that belong to the egg by nature, neither softness nor hardness will figure on that list – or at least, we will have no reason to think so. And if the same kind of variability with conditions can be shown to obtain with any of the observable features of the egg, this would seem to cut us off from any kind of grasp of its nature.

Notice that the notion that the appearances might be *deceptive* plays no necessary role in this line of thinking. It is not that we might be *wrong* in thinking that the egg is soft when inside the bird or hard when outside it. The point is simply that the egg's softness is confined to its place inside the bird and its hardness to its place outside the bird; since these observed features are confined to one place as opposed to another, neither one of them can be taken to point towards the thing's nature. And in this sense the question "Is the egg *really* hard or soft?", which was regarded by Annas and Barnes as absurd, has a straightforward answer: "If by 'really' you mean 'by nature', we cannot say that it is really either hard or soft". It might be wondered, in this case, why Sextus even speaks of the egg *appearing* soft in the one place and hard in the other; why not say that it *is* soft and hard respectively? The point, I take it, is to emphasize that the egg's softness or hardness is not a guide to the nature of the thing, given each one's restriction to a specific place. The egg *presents itself as* – and in this sense, "appears" – soft in one place and hard in the other, but neither "appearance" can be taken to show us how the egg is by nature. If this is the notion of appearance in operation here, it has a very respectable precedent. At the end of *Republic* 5 Plato has Socrates speak of the many beautiful things that will also *appear* ugly, the many just things that will also *appear* unjust, and so on (479a-b). Again the point is not that we might be mistaken in considering these things ugly in certain circumstances. On the contrary, the ugliness that they present in certain circumstances is taken seriously, as being a decisive obstacle to our considering them really beautiful; for something truly beautiful – something that we could legitimately say "is" beautiful – would have to manifest its beauty invariably and without regard to circumstances. Socrates' point is that nothing in the sensible realm measures up to that standard – for the epithets "beautiful" and "ugly"

or for any others; only the Forms do that. And that is his point in calling the beauty and ugliness of sensible things merely "apparent".

Here, then, is a way of spelling out the contrast between the nature of a thing, and how it strikes us when in a certain place or in a certain position or at a certain interval, which does not depend on the kind of thinking characteristic of the Five Modes; the focus is not on a conflict between the thing's appearances, but on the fact that these appearances are all restricted to certain specific conditions. Now, I have concentrated on a small cluster of examples, ones that seemed particularly inappropriate to an interpretation in terms of conflicting appearances between which one unsuccessfully attempts to choose. But most of the examples, in both Sextus' and Diogenes' versions of the Mode on which we have focused, are admittedly amenable to that interpretation, and it is no doubt most natural for us to read them in that way. However, it does not follow that they cannot also be read in the other way. Perhaps the oar can be considered to present a bent aspect when in water and a straight aspect when in the air, just as the egg presents a soft aspect when inside the bird and a hard aspect when outside it; perhaps the sun comes to assume different features as it occupies different positions in the sky; and perhaps doves' necks change colour as they turn in different directions. If so, then in these cases, too, the restrictedness of each appearance to specific conditions would be the central notion, not the conflict between the two appearances and the pressure to try to choose between them.

It must also be admitted that the examples on which I have focused in developing this alternative interpretation – the egg, the coral and lyngurion – appear only in Sextus' version of this Mode.[18] By the standard that I introduced earlier, according to which examples that appeared both in Sextus and in Diogenes were more likely to go back to Aenesidemus than those that appear only in one author, these examples are clearly not ones that we can attribute to Aenesidemus with any confidence. However, the idea of a connection between the restrictedness of a thing's appearances to specific conditions, and our inability to get at the nature of the thing, does appear in both authors, and it was that idea that I was using those examples to try to explain. One could well imagine that, if Aenesidemus did develop a line of thought of the sort that I have sketched, others might later have introduced examples that were especially suitable to that line of thought – perhaps more unambiguously so than the examples he himself had used.

18 In addition, none of them appears in the passages on the Academics that I mentioned earlier (see, p. 148 n. 11).

I have suggested the possibility of Aenesidemus' having argued for a sceptical conclusion – that we are not in a position to grasp the nature of things – by a somewhat different route from that with which we are familiar in most of Sextus (including in Sextus' version of this Mode itself). Do we have any other evidence that Aenesidemus argued in this way? Well, for one thing, several other of the Ten Modes in Sextus' presentation of them also include a contrast between our awareness of how things strike us in certain specific conditions, and a grasp of the *nature* of those things, or of how they are "purely" (εἰλικρινῶς) or "barely" (ψιλῶς) or "absolutely" (ἀπολύτως) – that is, independently of any particular conditions (*PH* 1, 124. 128. 134. 135. 140. 144. 163); the latter is not available to us because our experience of the things always takes place in some conditions or other. The Mode relating to "positions and intervals and places", then, seems to be by no means unique in this respect. In addition, a similar contrast can be found in another work of Sextus, *Against the Ethicists:* we cannot speak of things as being good or bad by nature because we only ever experience things as good or bad in relation to specific circumstances or persons (*M* 11, 114. 118). I have long argued that *Against the Ethicists*, and the larger work to which it belonged, is earlier than Sextus' *PH*, and that *Against the Ethicists* in particular offers a form of Pyrrhonism distinct from, and earlier than, that which we find generally in Sextus.[19] The case for connecting this earlier Pyrrhonism specifically with Aenesidemus is complicated, and depends on a detailed comparison with the summary by Photius that I made use of at the beginning. It is by no means uncontroversial, and I certainly cannot undertake to defend it here.[20] However, to the extent that one finds it plausible, one will also find the form of argument that I have tentatively ascribed to Aenesidemus, on the basis of Sextus' and Diogenes' version of the Mode that has been our subject, to be part of a wider pattern.

I close with two final questions, both of which are independent of the question which of the two possible interpretations of this Mode that I have offered is closer to Aenesidemus' original goal. First, does our examination of this Mode point to any particular *conception* of place or space on Aenesidemus' part? The answer to this, I think, is clearly negative, and for this purpose it makes no difference which of the two interpretations one adopts. Either way, places, positions and intervals are simply a set of conditions of objects – one set out of many, as the multitude of Modes makes clear – that stand in the way of our grasping how those objects really are. For this purpose it does not matter

19 See especially Bett 1997.

20 For interpretations of Aenesidemus that make his position much closer to the later Pyrrhonism of Sextus, see Schofield 2007; Hankinson 2010. Both are also to varying degrees sceptical of my view of the distinctness of *Against the Ethicists*; on this see also Machuca 2011.

what place itself is; the point is that being in different places, or in different positions, or at different intervals, results in the objects appearing differently, and that is the starting-point for sceptical reasoning. Nor, indeed, would we expect Aenesidemus, as a sceptic, to have advocated or presupposed any particular conception of place. We saw at the outset that Aenesidemus tackled topics in physics that are at least closely related to place, and that it would have been in no way surprising if, in the course of his scrutiny of physical doctrines, he did tackle place as a topic in its own right. But if so, we can assume that his approach was critical rather than constructive. Whatever his arguments on the subject may have been, they would in this respect have resembled the argument in the Mode on place and related matters. And in this respect Aenesidemus does not belong in the same company as most of the philosophers under consideration in this volume, who put forward conceptions and theories of place or space that deserve to be explained, analysed and assessed.

However, if Sextus' approach to physics is any guide at all, we can also assume that Aenesidemus did engage in discussion about the conceptions and theories advanced by (in Sextus' terminology) 'dogmatists' such as these. And this leads to my second question: is it possible to connect what Aenesidemus does in the Mode on place, etc. with his approach to physics in general? Not directly, perhaps. The Ten Modes mostly avoid theoretical contexts, working instead by the accumulation of everyday examples,[21] and the Mode on which we have focused is no exception. However, it is not hard to see that this Mode could quickly take one towards a much more fundamental debate between a sceptic and a proponent of some physical theory. As we saw, many of the phenomena appealed to in this Mode were also discussed by non-sceptical philosophers, and some of these claimed to have physical theories that would *explain* the appearances; rather than forcing us to suspend judgement about the way things really are, these philosophers would claim, the appearances made use of in this Mode can all be accounted for by a single consistent theory that accurately captures how things really are.

Suppose a scientist did challenge the effectiveness of this Mode along these lines. What might a sceptic say in response? There might be some objections that he could mount concerning the merits of the theory used to account for the appearances, and certainly Sextus' work includes plenty of examples of this kind of

21 Mostly perceptual examples, as is emphasized by Morison 2011. However, the Mode on values (tenth in Sextus' ordering) concentrates instead on different *views* on what is good or bad; and both Sextus and Diogenes list 'dogmatic suppositions' – that is, theoretical rather than ordinary views – among the types of items placed in opposition in this Mode, although only Sextus includes clear-cut examples of this.

argumentation. But he might also take the discussion to a deeper level, tackling the nature of scientific theory or practice itself. The Five Modes could be of assistance here, but there could also be considerations relating more specifically to the context of physics. And among the sorts of considerations that might be especially germane in this context would be those raised in Aenesidemus' Eight Modes against the causalists, which, according to Photius, played an important role in Aenesidemus' attack on the appeal to causes in physics generally (170b17–22). Thus, even though the Mode on places, positions and intervals is not itself part of the Pyrrhonists' detailed examination of physical theories, it could easily have served as the starting-point of a debate that went on to involve some of the most foundational questions in physics. At various points I have taken issue with Annas' and Barnes' reading of this Mode, but on this question I think they are absolutely right; as they say, the debate between the sceptic and the physicist that one can imagine being stimulated by this Mode "raises large questions in the philosophy of science which are still hotly debated".[22] And in this respect there is no reason to think that Aenesidemus' original version of this Mode differed from the versions that we still possess. While there is a clear sense in which Aenesidemus was an 'anti-physicist', this does not at all mean that physicists could simply ignore him; and in an indirect way, at least, the Mode on which I have concentrated may have had a role in his 'anti-physicist' enterprise.[23]

22 Annas / Barnes 1985, 109.

23 I thank the audience at the Capri conference for their helpful comments; the paper has especially benefited from comments by Charles Brittain and Voula Tsouna.

Emidio Spinelli

Φαινόμενα *contra* Νοούμενα: Sextus Empiricus, the Notion of Place and the Pyrrhonian Strategy at Work

1

The main goal of this paper is clear: I wish to examine the prickly question of the philosophical notion of place (τόπος), as it is presented and discussed by Sextus Empiricus, especially in his *Outlines of Pyrrhonism* (=*PH* 3 119 – 135).[1] Let me point out in advance, however, that I will not enter into any kind of minute philological discussion; and in addition, that I will not focus on the parallel passages about τόπος in Sextus' *Against the Physicists* (=*M* 10).[2]

Right from the beginning I wish to stress that the passage about place in *PH* (and especially the initial and final paragraphs on which I will be exclusively focusing my attention) can be deemed a clear case-study of Sextus' polemical attitude and at the same time of his genuine Pyrrhonian point of view. Accordingly, in this paper I will endeavour only to outline the general 'doxographical' trustworthiness of Sextus' reconstruction, while especially concentrating both on

1 For a first (useful and thoughtful) survey of the different concepts of space in Classical and Hellenistic philosophy, see Algra 1995.

2 This would be indeed a vain effort, or rather a mere repetition, after the lucid, careful and detailed analysis offered by Keimpe Algra in his paper "Sextus Empiricus and Greek Theories of Place. On *M* X, 1–36" at the XI. Symposium Hellenisticum (= Algra 2014). I had the privilege to be there and hear the first version of Algra's contribution; and some time ago he also sent me the final, revised text; I have made and continue to make the most of it and shall use some of his conclusions in the present paper as well. Therefore, I would like to thank him; and I would like to do so also for another reason. I know that the question of the chronological order of composition of Sextus' works is a topic that maybe no more than four or five people around the world find exciting. But although "in principle the gestation of the two works may have taken place in at least partly overlapping periods and the differences could be due to the different purposes of the two works, perhaps even to different intended readerships" (Algra 2014, 1 n. 2 [pagination of the revised typewritten version]; see also Blank 1998, xvi n. 14) and although one cannot exclude the use of different sources in *PH* and in *M* 10, I must confess that I find extremely helpful the following conclusions which Algra has clearly stated after very carefully comparing the two passages: "if we have to venture an opinion on the relation between the two accounts in terms of chronological priority, I would say that it is more likely that the account in *M* 10 is the later one, since it is so clearly more complete and more elaborated" (Algra 2014, 11; see also Burnyeat 1997, 105 n. 18).

the main features of his specific dialectical strategy and on his final approach to a possible and coherent sceptical outlook (with the ethical consequences this entails).

2

Without entering suddenly *in medias res*, I deem it necessary, if we wish to correctly understand the proper framework of Sextus' philosophical effort in *PH*, to begin with the most important presentation of what he seems to consider a sort of 'basic definition' of the authentic 'nature' of his ἀγωγή:

> Scepticism is an ability (δύναμις) to set out oppositions among things which appear (τὰ φαινόμενα) and are thought of (τὰ νοούμενα) in any way at all (καθ'οἱονδήποτε τρόπον), an ability by which, because of the equipollence (ἰσοσθένεια) in the opposed objects (πράγματα) and accounts (λόγοι), we come first to suspension of judgement (ἐποχή) and afterwards to tranquillity (ἀταραξία).[3]

This description, which seems to offer a peculiar form of philosophical 'know-how', while adopting a method possibly familiar to Aenesidemus as well (cf. D.L. 9, 78) and offering a functional *résumé* of some sceptical features clearly listed at *PH* 1, 7,[4] is so decisive for Sextus that in the following paragraph (*PH* 1, 9) he immediately explains the exact meaning he wants to attribute to each of its parts.

First of all, although he is clearly aware of the multifarious semantic value of the term δύναμις, he does not want to stress any of its philosophical (and therefore inevitably subtle or even fancy) meanings; he rather uses it in its simple occurrence as a sort of handy linguistic substitute for the 'neutral' verbal expression "to be able to". Thanks to this initial caveat we are immediately informed of a more general trait of Sextus' attitude, i. e. his conscious choice of resorting – as far as possible – to utterances and wordings reflecting a common everyday linguistic habit or συνήθεια.[5]

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3 S.E. *PH* 1, 8 (all translations from *PH* are by Annas / Barnes 2000); cf. also *PH* 1, 31–33 and more generally Corti 2009, 16–18 as well as Morison 2011.

4 Namely: the investigative feature, the aporetic, and the suspensive; on the different nuances of this sceptical 'nomenclature' see especially Decleva Caizzi 1992, 293–313 and now also Grgić 2012.

5 Sextus' 'reductive' semantic choice is signalled by the use of ἁπλῶς, an adverb synonymous with κοινῶς: cf. e. g. *PH* 1, 198 and 202. This expression is significantly set in contrast, in *PH* 1, 9, to the formula κατὰ τὸ περίεργον, which, like all its cognates, is always used by Sextus to

As concerns φαινόμενα, Sextus seems to be equally precise. "At present/now" they are intended simply as "objects of perception". The presence of νῦν not only indicates a chronological restriction but also alludes to the fact that the same term can be (and indeed is) used by Sextus in another way in different contexts.[6]

The linguistic freedom adopted by Sextus in order to avoid any strictly dogmatic, semantic or syntactic, correspondence is surely at work also in the case of the formula "in any way at all" (καθ'οἱονδήποτε τρόπον), since this can be applied – according to a widespread technique of loose usage or even καταχρηστικῶς in Sextus' jargon (see below, pp. 162–163) – to more elements of the 'basic definition' we are examining: not only to the word δύναμις for reinforcing its plain meaning, but also and perhaps especially to the continuous discovery (or even invention) of multiple cross-oppositions. This last remark opens the way to any kind of antithesis between φαινόμενα and φαινόμενα, or νοούμενα and νοούμενα, or indeed – a possibility particularly interesting for our purposes and relevant to *PH* 3, 119–135, as we shall see – between φαινόμενα and νοούμενα. But it also enables the Sceptic to take a further step: he can apply that formula directly to the objects of any opposition (whether φαινόμενα and/or νοούμενα) and therefore accept them once again simply or loosely, without any additional question about their epistemological or ontological status.[7]

3

All these elements of Sextus' overall strategic definition of the effective nature and structure of his scepticism are the background against which we can also test his polemical analysis of many aspects of the so-called εἰδικὸς λόγος, explicitly dedicated to "each of the parts of what they call philosophy" (cf. *PH* 1, 5–6). Apart from his attacks against dogmatic logic (in *PH* 2) and ethics (in *PH* 3, 168 ff.), this seems to be particularly true in the case of the section on physics

describe the kind of over-subtle arguments adopted by the Dogmatists, and by some of them in particular (namely, the Stoics): see, for instance, *PH* 2, 246.

6 See too Pappenheim 1881, 4. It is also most likely that Sextus was in this case employing and reinterpreting arguments first brought forth by Aenesidemus, as is suggested by a comparison with *M* 8, 216.

7 Sextus' strategy when it comes to the role of τὰ φαινόμενα is at any rate much more subtle and complicated, since he admits that a genuine Sceptic can even argue against them, but *disserendi causa*, if he has to fight against προπέτεια, the most dangerous dogmatic disease: cf. therefore *PH* 1, 20 and below, pp. 167–168.

of his *Outlines of Pyrrhonism* (*PH* 3, 1–167). Sextus opens it by recalling another feature of his method: the main target of any sceptical critique will be the demolition of the more general theses and accounts put forward by dogmatic schools, without wasting any time on the more specific characteristics of their doctrine.[8] Such a method will also impose on Sextus the additional duty of selecting for each topic discussed the most relevant and significant positions, in order to ensure that he will be presenting to his reader the most comprehensive reconstruction of any argument he might be debating.

One can attempt to test the coherence of Sextus' methodology not only by analysing the chapters he immediately devotes to many central topics of the dogmatic approach to physics,[9] but – as stated at the beginning of this paper – also and especially, in my opinion, by insisting on the compact section he writes about the notion of place/τόπος.

As a general and introductory remark, also useful for expressing a careful (and in no way naïve) judgement on Sextus' doxographical richness or even faithfulness, one should subscribe to Keimpe Algra's conclusion. By selecting in *PH* 3, 119–135 two basic dogmatic doctrines (the Stoic and the Peripatetic), "Sextus' accounts on place basically cover all there was to cover for someone writing in the early Imperial period".[10] Before selecting any philosophical definition of τόπος, however, Sextus applies here one of the caveats clearly expressed and employed in other passages from his works.[11] He distinguishes two senses in which one can speak of place (*PH* 3, 119): 'strictly' (κυρίως) and 'loosely' (καταχρηστικῶς).[12] The first sense indicates what encloses something in a proper way (e. g. the air that surrounds me);[13] the second must be intended

8 Cf. *PH* 3, 1, a passage that can surely further be illuminated by other Sextan references: see below, p. 169 and n. 41.

9 They are dedicated to the following notions: active principles, God, causes, material principles, bodies, blending, motion, increase and decrease, subtraction and addition, transposition, whole and part, natural change, generation and destruction, rest, place, time, and number.

10 Algra 2014, 8.

11 With regards to the specific question of place, see therefore *PH* 3, 75; *M* 10, 95 and 108.

12 For a first survey on the meaning of this adverb (and its cognates) see Burnyeat 1997, 104–106 and now also Corti 2009, esp. 130–134 (who proposes the following translation: 'de façon non-centrale').

13 And (cf. Arist. *Phys.* 4, 4 212a5–6) this is "a conception of place which is familiar from Aristotle: place as the immediate container of a body. Your place, on this idea of it, is the innermost boundary of the body (of air or other material) surrounding you, the boundary which encloses you and nothing else" (Burnyeat 1997, 102; see too Annas 1992, 217–218).

'intuitively'[14] or according to 'the sloppy usage',[15] as when one very simply says something like "the city is my place".

Sextus explicitly states that he will concentrate his attacks only on the first point. What does this exclusion of the second sense mean? Although one can speculate about his decision, the special occurrence here of the adverb καταχρηστικῶς seems to be clear enough, since "Sextus presumably allows that things have places in the loose sense, a sense accepted by common sense and not invented by the Dogmatists".[16] Indeed, each time we find the semantic family linked to κατάχρησις in Sextan works, this is in relation to everyday life and its usages/habits; and in addition we are told that all those aspects are not called into question by the Sceptic, but rather are a basic feature of his global attitude for facing the world and acting[17] within it. Also in the case of the existence of place, therefore, what Sextus would like to stress is the fact that *regardless* of the fancy disagreements due to the clash of dogmatic doctrines, any genuine Sceptic could not deny the evidence of his being located somewhere, in a place.[18] *If and only if* we decide to play the game of abstract philosophical disputes, we are then invited to turn our back on the real world and enter into a dangerous, parallel universe. Here plenty of strange theories are available, even for speculating against τὰ φαινόμενα. This is the only 'Matrix-dimension' where even Sextus admits – to return to a passage quoted before – that "if we do propound arguments directly against what is apparent, it is not because we want to reject what is apparent that we set them out, but rather to display the rashness of the Dogmatists" (*PH* 1, 20).

We can thus understand and explain not only why the discussion will be restricted to the first sense of place alone, but also and above all why one of the conflicting, but not definitively overwhelming parties will propose its conclusions exactly on the basis of that evidence/ἐνάργεια, which should be sufficient

14 See again Annas 1992, 217.

15 Burnyeat 1997, 104.

16 Annas / Barnes 2000, 175 n. 150.

17 Or perhaps for 'being active'? For a very subtle distinction between *to act* ("in the robust sense of the Dogmatist's theory of human action") and *to be active* (in the sense that Sextus' sceptic "goes *through the motions* of an ordinary life"), see Vogt 2010, 171–172.

18 Algra 2012, 22 stresses this fact, also thanks to the comparison with a parallel passage in *M* 10: "it is only the use of the *broad* concept of place (as in 'Aristotle is in Athen') which is presented as unobjectionable and accepted between dogmatists and sceptics (ὁμόλογον, *M* 10, 15), presumably in a non-theoretical context".

for the Sceptic not involved in the philosophical enterprise, but consciously confined to the needs of βιωτικὴ τήρησις and κοινὸς βίος.[19]

Given such a qualified inclusion of τὰ φαινόμενα too among the possible elements proper to a philosophical διαφωνία, Sextus can accordingly quote three fixed positions representative of all the alternatives available about place strictly speaking:

a. some admitted it;
b. some ruled it out;
c. others suspended judgement about it.

First of all and from a textual point of view, Sextus' use here of the past tense (ἔθεσαν..., ἀνεῖλον..., ἐπέσχον...) seems very significant to me: it means that he wants to describe three actual/historical positions and therefore to give more force both to the διαφωνία and to the precision of his doxographical report.

Secondly, it must be noted that:

– the alternative (a) can be supported by an appeal (a more or less direct one, as we shall see) to the force of ἐνάργεια (cf. *PH* 3, 120–121), as well as by elaborate philosophical arguments put forward either by the Stoics (cf. *PH* 3, 124) or the Peripatetics (cf. *PH* 3, 131);
– behind both the counter-arguments against (a) in all its aspects (*contra* evidence: *PH* 3, 122–123; *contra* Stoics: *PH* 3, 125–130; *contra* Peripatetics: *PH* 3, 131–133; more generally *contra* some definitional features of place: *PH* 3, 134) and the final appeal to ἐποχή (cf. *PH* 3, 135) it is possible perhaps to detect the active presence of a sceptical enterprise, in its negative and positive features.

Let me remark in advance that the defence of the real existence (or ὕπαρξις) of place is based on some allegedly evident and hence undeniable facts,[20] which seem to echo at least some of the ἔνδοξα already quoted by Aristotle in his *Physics*. Apart from the presence of parts of place (right/left, up/down, in front/

19 For further observations on these terms and their interpretation/translation see below, pp. 175-178.

20 We cannot perhaps speak of 'arguments' *stricto sensu*, but only ... καταχρηστικῶς! Rather, what we have here are "quasi-arguments, from ἐνάργεια", since "even the Aristotelian examples from ἐνάργεια, in so far as they make use of phrases like 'the same place' or introduce a concept like natural motion, use place in what is no longer a completely non-theoretical context or an uncontroversial (because vague) sense" (Algra 2014, resp. 7 and 23). For the conclusion that "Sextus' position is an uncomplicated one" see Bailey 2002, 207.

behind),[21] Sextus alludes also to the well-known phenomenon of changing place at different/successive times (or ἀντιμετάστασις),[22] while adding as an example a personal experience: "where my teacher used to talk there I now talk".[23] The dependence from Aristotelian material seems to become certain not only when Sextus presents as a fact what is rather a precise philosophical theory strongly defended by Aristotle (i.e. the different place which light and heavy things occupy *by nature*/φύσει),[24] but also when he invokes the *auctoritas* of Hesiod's poetic stress on the role of χάος[25] (although he also adds some terminological speculations on its etymology). The final argument *pro* the existence of place perhaps also shows (at least partially) a similar Aristotelian flavour and seems to be immediately based on facts, although it is presented as a sort of double *modus ponens:*

- "if there is body, there is place"[26] and "if there are things by which and things from which, there are also things in which", namely places (cf. *PH* 3, 121);[27]
- but the first, then the second.[28]

The battery of Sextus' objections against the 'party of evidence', however, reveals his distance from any Aristotelian method, since he does not want to use facts in order to produce a more refined and comprehensive theory.[29] He simply aims to oppose not only the denial of any force to poetry for the discussion of philosophical topics, but also some negative counter-arguments, maybe of Pyrrhonian

21 Cf. Arist. *Phys*. 4, 1, 208b12–27.

22 Cf. Arist. *Phys*. 4, 1, 208b1–8.

23 *PH* 3, 120. This is one of the rare autobiographical references in all of Sextus' corpus and it has been the object of some speculation: since his teacher, possibly Herodotus of Tarsus, had been active in Rome, the allusion should be read in the sense that Sextus too was or had been at some time in Rome (see especially Goedeckemeyer 1905, 266). For another (maybe even more speculative?) hypothesis, according to which this passage might derive "aus mündlichen Vorträgen", see also Pappenheim 1881, 208.

24 Cf. again Arist. *Phys*. 4, 1 208b8–27.

25 Hes. *Theog*. 118; cf. also Arist. *Phys*. 4, 1, 208b29–33. For further, useful references about this verse see Annas / Barnes 2000, 176, n. 153.

26 Cf. Arist. *Phys*. 4, 1, 208a29. In addition: should we see a reference here to Epicurean physical principles? See Annas / Barnes 2000, 176 n. 155 and accordingly Epic. *Ep. Hdt*. 39–40, along with Francesco Verde's commentary in Verde 2010, esp. 89–98.

27 One should remember that in *M* 10, 10, besides the expressions τὸ ἐξ οὗ and τὸ ὑφ' οὗ, we also find τὸ δι' ὅ: on this question see again Algra 2014, 14.

28 For this abbreviated formula of the implication, cf. also *PH* 2, 142.

29 On this question see especially Annas 1992, 218 and Algra 2014, 23–24.

origin[30] and based explicitly on the charge of circularity or of *petitio principii*. However, these do not always appear cogent and convincing, so that Sextus himself decides to give more force – or better a more systematic variety (ἥδη καὶ ποικιλώτερον, *PH* 3, 123) – to his *pars destruens* through a chameleon-like attack against the more powerful dogmatic stances/στάσεις available 'on the market' at that time.

4

I do not wish here to provide any in-depth analysis of the paragraphs of *PH* 3, 123–133 in which Sextus reports and at the same time criticises first Stoic theories and then Aristotle's (and/or Peripatetic) positions. As I already mentioned at the beginning of this paper, the job has already been done – very well – by Keimpe Algra, not least through a close engagement with the parallel passage in *M* 10, 1–36.[31]

All questions of *Quellenforschung* aside, what I am pursuing is a different goal. For I here wish to focus on the last two paragraphs of *PH* 3, devoted to the concept of place, since they effectively enable us to appreciate at least two elements:

- a general feature of the kind of polemics Sextus resorts to against the Dogmatists, namely his establishment of a sort of 'network' of mutually interrelated concepts that are all equally unsustainable and indefensible (in § 134);[32]
- the real 'moral of the story' which Sextus wishes to draw from his treatment of the notion of place; this concerns both the choice of a specific method for

30 See also Bailey 2002, 206 and Algra 2014, 4.

31 In his analysis Algra has not only emphasised the underlying features of Sextus' doxographical method, but also attempted to identify the sources the philosopher drew upon. In this respect, I believe Algra is right when, particularly with regard to the anti-Aristotelian polemical section, he suggests that Sextus "did not use the original text, but that the information he provides is derived from a handbook or ἐπιτομή. If this is the case, his ultimate source would most likely have been a Peripatetic handbook, used either directly or through a sceptical intermediary source" (Algra 2014, 18); see also Gottschalk 1987, 1139. For a slightly different conclusion see however Annas 1992, 220 (and n. 43), 229–230. As to the doxographical source maybe used by Sextus also with regard to Stoic material see Algra 2014, 4.

32 As Algra 2012, 4 rightly emphasises, "it contains more general arguments, independent of any particular concept of place one opts for; the arguments rather turn on the fact that any definition of place will have to use other problematic concepts, or treat place as co-relative to other items that are disputed".

his anti-Dogmatic attack and the final outcome of every philosophical endeavour on the part of the real Pyrrhonist (this is in § 135).

4.1

So let us start from *PH* 3, 134. First of all, it is worth noting that the objections raised in this paragraph are labelled in a very specific way by Sextus himself: for they are formulated 'in a more general manner', i.e. κοινότερον. In particular, it is worth analysing the function which Sextus would appear to be assigning this term. On other occasions too, he uses it for significant points in his argument, apparently for the same purposes. One may refer to several passages in Sextus' writings,[33] starting from the *locus difficilis* (or indeed *terribilis*, as far as conflicting interpretations go) *PH* 1, 13. But I cannot and do not wish to focus on it here.[34]

In support of my overall analysis, just to provide an example, I might refer to at least three passages from Sextus' *corpus* in which the presentation of more general arguments (or rather of arguments with a more generally philosophical tone, and which are also regarded as the most important or at any rate most effective ones on a polemical level, possibly on account of their genuine sceptical origin) is connected – in a direct and intentional way, I believe – to the Pyrrhonist's aim of achieving a correct ethical condition.

First off, let us consider a very important section in *PH* 2, 251–252, devoted to an attack against sophisms, "that lead not only to falsity but also to other absurdities". Without going into the details of the complex structure of this specific polemic raised by Sextus,[35] we should note that in one of the turning points in his argument he claims that there are two alternatives to each reasoning: this will lead to a conclusion that is either inadmissible or to be necessarily accepted. In the latter case, in the face of necessity, the Pyrrhonian will have to grant his assent, with no further problems. In the former case, by contrast, if the conclusion suggested turns out to be absurd, even if it is presented in highly plausible terms, we should not yield to προπέτεια/rashness, which is a typically dogmatic vice. In other words, we must not assent to this absurd conclusion, but rather demand it

33 Cf. *e.g. PH* 1, 13; 3, 13 (and 134, obviously); *M* 3, 60; *M* 7, 314; *M* 8, 14 and 272; *M* 9, 258. 358 and 414.

34 As a seminal starting-point for an analysis of this passage and its controversial interpretations, see the 'famous' papers by Barnes, Burnyeat and Frede now collected in Burnyeat / Frede 1997.

35 At any rate, on some ethical consequences of Sextus' attack against sophisms see Spinelli 2009; see also Grgić 2011, esp. 84–86.

be put aside, if we are really striving for the truth and wish to avoid engaging in childish drivel. In order to strengthen this stance, Sextus draws upon an example (which had possibly already been used by Chrysippus, albeit in a different context, namely a discussion on sorites).[36] Sextus also refers to elements that presuppose the concept of space (as well as that of motion), without questioning their existence or theoretical legitimacy. The text (*PH* 2, 252) reads as follows:

> If a road is leading us to a precipice, we do not drive ourselves over the precipice because there is a road leading to it; rather, we leave the road because of the precipice: similarly, if there is an argument leading us to something agreed to be absurd, we do not assent to the absurdity because of the argument – rather, we abandon the argument because of the absurdity.

The outcome of this 'supplementary enquiry' and of this rejection of rash assent can only be a cautious suspension of judgement, which is even presented here as a kind of conscious and expanded extension of a requirement upheld by Chrysippus himself and his followers, "when the sorites is being propounded".[37]

The second passage in which arguments presented "in a more general manner" prove philosophically compelling while having what is almost certainly a familiar Pyrrhonian air is the conclusion of the ethical section of *PH* 3, which contains a radical attack against all possible forms of education. Here, in § 270, Sextus sets out to criticise the specific idea of an art of living and the alleged possibility of teaching it. Before doing so, however, he applies the adverb κοινότερον to the range of arguments he has developed so far against the subsistence and 'conceivability' of the fundamental elements constituting the educational process (namely what is taught, teachers, learners and the way of learning). No further explanations are provided as to what value should be assigned to this term. Luckily, however, the topics discussed in these closing paragraphs of *PH* are also explored in two other sections of Sextus' *corpus:* at the end of *M* 11 and at the beginning of *M* 1. Without wishing to overlook or downplay the differences between these parallel treatments, it will be useful for our purposes to take note of one detail. The anti-educational arguments which are succinctly presented as being of a more general sort in *PH* 3, 270 are labelled in the same way not just in the parallel passage *M* 11, 243, but also and most significantly in *M* 11, 217, since they reflect a selection drawn by Sextus from among his most important arguments (τὰ κυριώτατα). The latter, in turn, are described in *M* 1, 7 as "the effective arguments" (τὰ πραγματικῶς λεγόμενα): a different and significant ex-

36 Cf. Cic. *Ac.* 2, 94, quoted by Annas / Barnes 2000 137, n. 352.
37 *PH* 2, 253 and, for other references, Annas / Barnes 2000, 138 n. 353.

pression which is nonetheless used once again to emphasise the polemical effectiveness of attacks carried out κοινότερον.[38]

Finally a third passage is worth mentioning, *M* 1, 270. Here Sextus claims that the criticism he has levelled so far may be taken to suggest that even "the part of grammar concerning poets and prose-writers" has been potentially destroyed. But he then adds:

> none the less, we shall attempt to examine what can be said on a general level (κοινότερον) in this part too, especially because the grammarians have so much confidence in it that they dare to use it to make grammar's usefulness for life and necessity for happiness plausible.[39]

Leaving aside the developments of Sextus' subsequent criticism of poets and prose-writers, and taking the explicit and confirmed ethical relevance of this polemic against the grammarians as a given, in this case too – as in those previously examined – it seems to me that Sextus' use of more general arguments (κοινότερον) "is a remainder of his overall method of attacking the most important, most fundamental tenets of his opponents, rather than the details".[40]

Thanks to the three passages just discussed, we have, in sum, strategically relevant examples, in which Sextus insists on the special character of sceptical attacks. Often described elsewhere by means of images taken from the military world, as for example that of the siege, and distinguished from the polemical practices of, for example, the sceptical Academy,[41] such attacks aim not so much to insist on matters of detail or those peripheral to this or that dogmatic theory, but rather to demolish its fundamental principles and essential elements. This then becomes the target of Sextus' critiques: according to an Ockham-like principle of economy, one needs to concentrate the fire of one's polemic against the foundations of the dogmatic edifice, since only by totally knocking them down will the collapse of all the other theoretical aspects that depend on them also be guaranteed.

If we return to the passage from *PH* 3, 134 we are concerned with, then, we can now better appreciate its value and significance. The text reads:

> More generally, the following points can also be made. If there is such a thing as a place, it is either a body or incorporeal. But each of these is at an impasse, as we have suggested. Place too, then, is at an impasse. A place is thought of in relation to the body whose place it

38 See also Blank 1998, 84.
39 *M* 1, 270, tr. Blank 1998, 53.
40 Blank 1998, 281.
41 Cf. esp. *M* 9, 1–3; *PH* 2, 84; 3, 1; *M* 8, 337a; 11, 257.

> is. But the account of the reality of bodies is at an impasse. So too, therefore, is the account of place. The place of anything is not eternal. But if it is said to come into being, it is found to be non-subsistent since generation is not real.

This paragraph too deploys more general arguments against the concept of place. The latter, however, is understood in its specific sense – as we have seen – stripped of its simple communicative and pragmatic value ('this is my city'), so as to justify its use in more sophisticated terms or at any rate according to what is regarded as a unique definition.[42] In his attack in *PH* 3, 134, Sextus draws upon the most significant and general notions employed by his opponents, with the added corollary that all these notions are presented as being mutually interconnected: either they all stand or they all fall.

In this case, Sextus chooses to base his polemic on the highest genus in Stoic ontology (τὸ τί), under which we should count both bodies and what is incorporeal. Consistently with this, he poses a dilemma: if place is 'something', then (according to those dogmatist theories which Sextus draws upon and at the same time fights the most) it can only be either a body or an incorporeal.

Without recalling in any detail the objections raised just a few paragraphs earlier, but with the advantage of being able to easily bring his readers' minds back to them, Sextus unambiguously rules out both alternatives. Both bodies and incorporeals, he notes, have been subjected to ἀπορία and their non-subsistence has clearly been demonstrated in *PH* 3, 38–55. This ἀπορία and the impossibility it entails of affirming the existence of place extend – almost as if by transitive property – to place itself, which apparently cannot be accounted for in any legitimate and valid way.

After this first attack, Sextus' argument changes its focus, while preserving its general character and indissolubly linking the two concepts of place and body. It would be difficult to deny that thinking of place means thinking of it as the place of a body, as the place in which a body *de facto* finds itself or might potentially find itself; but if this is the case, and if the aforementioned objections raised against the body remain valid, then along with bodies place too must prove non-subsistent.

The last argument which deserves the label of 'more general' sets off from yet another consideration. Possibly building upon a previous objection raised against the Peripatetic stance, it would appear to assume that the place each thing occupies cannot be eternal. If this is the case, then, one must admit that the place in question had an origin, a γένεσις. Here too, without going into any details, through a kind of effective cross-referencing Sextus simply refers

42 See also Burnyeat 1997, 106.

to the objections he raised against generation (and at the same time against corruption) not just a little earlier, in *PH* 3, 132–133,[43] but also in a more extensive way in *PH* 3, 109–114.

It seems clear to me that these arguments of Sextus in *PH* 3, 134 suitably fit within the framework of the general strategy we have just discussed. They target the basic points or concepts – not details – upheld by Sextus' opponents by resorting to a range of weapons typical of the Pyrrhonian arsenal: from hypothetical dilemmas to the correlated demolition of two objectives, while significantly latching on to the sceptical polemical approach which has already been established and presented to the reader in the previous sections targeting dogmatic physics.

4.2

The fact that Sextus' aim at this point is to make his own polemic both as succinct and as effective as possible is shown by the very opening sentence of *PH* 3, 135. Let us read the full passage:

> It is possible to make many other points too; but, in order not to lengthen our account, we should infer that the Sceptics are confounded by the arguments (λόγοι) and discountenanced by the evident impressions (ἐνάργεια); hence we subscribe to neither side, so far as what is said by the Dogmatists goes, but suspend judgement about place.

Among the sceptical objections against the philosophical and dogmatic view of place, which had possibly been developed in a sweeping and systematic way ever since Aenesidemus,[44] it would be possible to find many other arguments intended to stress the aporetic character of this notion. Yet this is not the method Sextus adopts. Rather, he wishes to embrace the criterion of economy in exposition as a guiding thread consistently running throughout *PH*. For this reason, Sextus draws his analysis of place to a close by explicitly and unambiguously stating that he does not wish 'to lengthen' his argument/λόγος. The verb used here (μηκύνω) is a sort of *terminus technicus*. Sextus employs it in those cases in which he seeks to programmatically express his desire not to over-extend his anti-dogmatic polemic through the method of attack which – as already mentioned – was considered as typical of the sceptical Academy.[45]

43 On this passage see also Algra 2014, 6.

44 See therefore Bett's contribution in this volume.

45 See above, p. 169 n. 41.

Sextus, then, regards his discussion up until this point as being perfectly adequate for justifying the aim he has set himself, as far as the level of philosophical λόγος is concerned. Sextus' discussion should be seen as confirming the need to ultimately embrace the cautious Pyrrhonian idea of a healthy suspension of judgement on the matter of the conceivability and subsistence (or ὕπαρξις) of place.[46]

So what has this discussion revealed? Sextus sums up the opposition (μάχη, according to his technical terminology) which has characterised his analysis (like many others developed on the level of a clash between different but equally plausible δόξαι) by using two particularly significant verbs and making one crucial clarification.

Sextus argues that on the one hand the λόγοι of dogmatic philosophers have proven compelling, to the point of confusing even the Sceptics.[47] On the other hand, however, what has elicited bewilderment and confusion (again among the Sceptics) has been the evidence invoked, or to be more precise the evidence used as part of the philosophical argument (or even included in initial claims of an already Aristotelian bent).[48]

Sextus ultimately provides a crucial and in my view perfectly uncontroversial clarification regarding the consequences of the equipollence of νοούμενα and φαινόμενα. This certainly leads to ἐποχή – as indeed it must – because there is no way of choosing between opposite theses not in an absolute sense, but rather in a qualified and circumscribed way, which is to say only with regard to the arguments upheld by the Dogmatists ("so far as what is said by the Dog-

46 Notwithstanding its 'anairetic' and apparently negative conclusion, a similar strategy (namely following the correct path towards a coherent ἐποχή) is at work also in the parallel section of *M* 10, 1–36. It is true that here (*M* 10, 36) Sextus concludes "we have abolished place"; but "that we should not simply interpret it as meaning that 'we have established that place does not exist' is strongly suggested by the way in which Sextus introduces his programme at the beginning of his account, in *M* 10, 6, viz. as 'to expound the arguments on both sides and to achieve suspension of judgement on that basis'" (Algra 2014, 19); see also Burnyeat 1997, 100–101 and more generally, with further textual and bibliographical references, Spinelli 2010, 256–258. Maybe Sextus' preliminary and programmatic explanations about his method and intention must *always* be kept in mind, respected and applied (even in the case of his attack *Against the Ethicists?* cf. therefore *M* 11, 17–20).

47 And note that the verb used here, ἐντρέπω, is a *hapax* in Sextus' *corpus*.

48 It is worth noting that the verb employed here, δυσωπῶ, occurs in two different contexts in Sextus' corpus: in *PH*, to indicate the confusion engendered by the evidence both among the Sceptics – as in our passage – and among the Dogmatists (*PH* 3, 66); and in *M*, to acknowledge that the Dogmatists with their *logoi* confound the aporetic philosophers (*M* 10, 66) or, vice versa, that the Sceptics through their counter-arguments confuse Dogmatists, such as for instance analogist grammarians (*M* 1, 216 and 309) and astrologists (*M* 5, 95).

matists goes").[49] Yet in life – in the real, common and eventful life of our everyday experiences – this might not be the only available option.

5

Might a different scenario be envisaged then? In a way, yes. Taking a careful and honest look at the conclusion reached by *PH* 3, 135, we might sum it up by saying that even the discussion of place presented in *PH* may undoubtedly and consistently be described as an opposition and theoretical clash between φαινόμενα and νοούμενα. Perhaps, then, the most correct and legitimate way to read and interpret this conclusion – without embarking on some bold speculation – would be in the light of the text we have set off from: *PH* 1, 8 (see above, p. 160). For this is where Sextus expounds – in a direct and highly programmatic manner – the fundamental premises for measuring the consistency of the Pyrrhonian 'essence'. Without yielding to the temptation of diving into the complex debate on the alleged need for 'insulation' and without all too easily levelling a charge of self-contradiction against Pyrrhonism, which always seems to be forced on the defensive and to be brushed to the side as philosophically inconsistent, it might be worth examining Sextus' discussion about τόπος within the framework of the methodological guidelines he claims to be following right from the start and which he constantly applies in his pursuit of happiness. It is on this level that many of the analyses made of the passage in question so far would appear to have overlooked an important, or indeed decisive, factor. Let me explain what I mean by this.

First of all, we should ask ourselves about the nature of this conflict of stances concerning the notion of place which I have sought to reconstruct, at least in its essential outline. This question may adequately be addressed by considering those paragraphs in which Sextus clearly describes – by drawing a distinction all too often ignored by his interpreters – not *the* aim of Pyrrhonian philosophers but rather the *double* aim that characterises their ethical choices and lives (cf. *PH* 1, 25 – 30). It is difficult to deny that at one level the aim of Pyrrhonism is pursued by engaging with opposite δόξαι, or rather, to use Sextus' terminology, that it exclusively applies "in matters of opinion" (ἐν τοῖς δοξαστοῖς). Lest we ignore, and hence betray, the premises of Sextus' genuine stance, we should also bear in mind, however, that within this interpretative framework Sceptics can reasona-

49 On this important formula see at least Brunschwig 1990; useful observations also in Algra 2014, 20 – 21.

bly strive to attain the specific, albeit not sole and all-embracing, goal of ἀταραξία – tranquillity or imperturbability. As is clearly shown by the opening passage of *PH* 1, 8, ἀταραξία stems from the suspension of judgement.[50] This imperturbability is in turn determined by the equal force of λόγοι on the one hand (*stricto sensu* philosophical λόγοι or at any rate ones that are also philosophically conditioned by an appeal to ἐνάργεια, as is usually the case with mere men, or simple men, or – to use a more cogent expression – οἱ ἰδιῶται) and of πράγματα on the other, which is to say something which may even have to do with all that concerns the crude and concrete conduct of our lives.

All this will hold and prove compelling for a Sceptic *if and only if* it is set against the dogmatist claim to be able to ascertain the truth or falsehood of our statements concerning what surrounds us. Do I wish to know, beyond the slightest doubt, *that I am in a place*, rather than merely accept that I *appear* to be in a place? Indeed, do I also wish to ascertain, in a strong epistemic sense, just *what* this place essentially is and what justifications I can or ought to adduce in order to be able to both envisage it and declare it to be ontologically existent? In this difficulty lies the origin of the genuinely sceptical approach in the philosophical field:

> For Sceptics began to do philosophy in order to decide among appearances and to apprehend which are true and which false, so as to become tranquil; but they came upon equipollent dispute, and being unable to decide this they suspended judgement. And when they suspended judgement, tranquillity in matters of opinion followed fortuitously.[51]

6

Yet, is it possible to live exclusively κατὰ τὸν φιλόσοφον λόγον? I might be intellectually paralysed if I decide to apply a philosophical λόγος more or less backed by some evidence or based on mere speculation to the question: is Anacapri the place of the conference I will be attending? Or again: how can I reach my place of departure, the railway station, given that the very concept of place is unthinkable, non-subsistent and subject to ἀπορία?

But if I then receive a telephone call and one of the organisers reminds me that my ferry will be leaving from the port on Thursday morning at twelve, or that

50 I cannot here explore in any detail the way in which Pyrrhonian *ataraxia* is attained, although it would appear to be linked to a kind of instantaneous and at the same time almost necessary automatism: cf. *PH* 1, 28–29.

51 *PH* 1, 26; cf. also *PH* 1, 12 and *M* 1, 6.

my hotel is on Anacapri and that the conference session will be taking place in 'Villa Orlandi', since I have given my (wholly pragmatic and – I should add – not very philosophical and by now rather compelling) adherence to this event, can I still afford to be paralysed? In other words, to quote Sextus, if I switch from the level in which I am simply caught "in matters of opinion" to the one he strikingly describes as being marked by necessity (be it natural or cultural – in other words, when dealing with "matters forced upon us", when we 'fall' ἐν τοῖς κατηναγκασμένοις),[52] I can no longer pursue the utter lack of perturbation as my aim. Rather, I will be pursuing a different goal: μετριοπάθεια, or 'moderation of feeling', since

> We do not, however, take Sceptics to be undisturbed in every way – we say that they are disturbed by things which are forced upon them; for we agree that at times they shiver and are thirsty and have other feelings of that kind. (30) But in these cases ordinary people (οἱ μὲν ἰδιῶται) are afflicted by two sets of circumstances: by the feelings themselves, and no less by believing that these circumstances are bad by nature. Sceptics, who shed the additional opinion that each of these things is bad in its nature, come off more moderately even in these cases.[53]

What guides me in this context cannot be the abstract force of philosophical arguments. If I accept the presence of a place or rather the fact that I can speak of place in broad or even 'inaccurate' terms ("the city is my place", as *PH* 1, 119 states), and turn it into a non-contradictory pragmatic suggestion, this is because I can regulate my life on the basis of what everyday experience has offered me in the past and continues to offer me today. This is what Sextus means when, against the charge of ἀπραξία, he claims that the Pyrrhonist can act (be active)[54] "according to the non-philosophical observance" (κατὰ τὴν ἀφιλόσοφον τήρησιν, *M* 11, 165). This is what he wishes to stress again in *PH* 1, 23–24. Sextus rejects the charge of inactiveness (ἀνενεργησία), after having passively and unwittingly accepted τὸ φαινόμενον as a criterion for action explicitly removed from any further form of ζήτησις (cf. *PH* 1, 22); he rejects it by stating – ἀδοξάστως, i.e. without any wish to turn his claim into a dogmatic assertion – that he leads his life κατὰ τὴν βιωτικὴν τήρησιν: "according to the observance of everyday life". This might not be a very flowing or charming translation,[55] but it avoids inappropriately introducing the notion of 'ordinary' in the descrip-

52 On this question see too Vogt 2010, 174.

53 *PH* 1, 29–30. Cf. also *PH* 3, 235–236 and especially *M* 11, 141–167.

54 See above, p. 163 n. 17.

55 If we wish to stress the real meaning of βιωτικός, should we rather translate 'in accordance with the needs of life' (Burnyeat 1997, 105 n. 17)?

tion of one's dependence on βίος. The latter is not a field for abstract speculation, since it has to do with "matters forced upon us" and thus imposes a series of inevitable points of reference, on a natural level (given that as human beings we cannot avoid perceiving, thinking and experiencing emotions and affections) as much as on a cultural level (given that we are not living on Mars but in the *here and now* – in both a geographical and historical sense – and are constantly conditioned by our education, by the rules of the community to which we belong and by the technical know-how which all around us seeks to put experience to the service of our own needs).[56]

7

By drawing upon what is so clearly stated in *PH* 1, 23–24 for our own purposes, we can therefore provide a different reading of the acceptability in Sextus' eyes of a plain and straightforward notion of τόπος:

- if I exercise the natural functions connected to my own capacity to perceive and think, I cannot but feel and claim – in plain, simple, broad or even 'inaccurate' terms – that I will find myself in a certain place, such as for instance my own city, prior to moving to a different place, such as Anacapri, moderately putting up with any consequence which might derive from the fact that I find myself here or there;
- if I yield to the needs of a nature that perfectly ignores laws (which is to say explicative dogmatic hypotheses that go beyond mere appearance, aiming for τὰ ἄδηλα) – which is in fact what I am bound to do given my condition as a human being (who "is not born from an oak of ancient legend, nor from a rock/but was of the race of men"[57]) – I will then inevitably be led to satisfy my own hunger or thirst, naturally by visiting a specific place, possibly a good restaurant, even experiencing moderate suffering, should I not find the food to my liking;
- if the acceptance of the laws and customs according to which I have been educated and raised represents the only, yet non-dogmatic, assumption by virtue of which on each occasion I fittingly regulate my own behaviour, to the point of agreeing with the idea that "piety is good and impiety bad", it will be normal and not at all a problem for me to choose a place for wor-

56 On the "quite ingenious" notion of "forced assent" and the related proposal of a special kind of "undogmatic assent" (both understood as anti-Stoic attitudes) see Vogt 2010, esp. 174–175.
57 For the quotation of this Homeric verse (*Od*. 19.163) cf. *M* 11, 161, trans. Bett 1997, 27.

shipping the gods: a nice temple, possibly a solid Neo-classical one, if available; and if I should ever have to perform a tough and challenging ceremony, I will accept to do so in a spirit of moderation;

– finally, if the sum of repeated and organised experiences has turned into a kind of τέχνη for me, devoid of any solid philosophical foundations yet sustained by general principles or even θεωρήματα founded on τήρησις and weakly cogent inferential processes, to the point of even potentially becoming an object of "teaching", then by standing aboard a ship and skilfully resorting to my knowledge of astronomy and meteorology, which is exclusively based on φαινόμενα,[58] I will be able to direct its prow towards whatever place I choose – possibly a quiet island like Capri – without having to subject myself or other members of the crew to any abstract discussion on the admissibility and very existence of this small tourist paradise, and indeed without too much fuss, in a spirit filled with moderation, should the sea happen to be a bit rough.

I do believe that this strategy represents the real core of the Pyrrhonian approach to life.[59] In the eyes of the Pyrrhonist, too much theory, an over-abundance of philosophical λόγος and the clash of beliefs claiming to be absolutely true represent a disease to be fought in different ways, by administering drugs of various strength at dosages that vary from case to case, depending on what dogmatist intoxication lies behind the disease.[60] If even the simple determination of the place in which we find ourselves or act falls within this framework, then we must deploy sceptical δύναμις. In such a way, we will be able to neutralise opposite and conflicting theses, reach equipollence, and attain the neutral and at the same time cautious outcome of ἐποχή, thus achieving imperturbability – at least (or rather *only*) "in matters of opinion", including with regard to the concept of place and its subsistence.

58 For Sextus' appreciation of such a kind of (practical and useful) 'astro-meteorology' cf. *M* 5, 1–2 and, for further observations, Spinelli 2000, 19–20.

59 See however Burnyeat's qualification, who in a footnote affirms: "I do not deny that insulation by subject-matter, between the theoretical and the ordinary, is to be found in antiquity also: the obvious example is the Empirical school of medicine [...]. But Sextus firmly repudiates the suggestion that the sceptic could consistently be an Empiric (*PH* 1, 236)" (Burnyeat 1997, 110 n. 26). Although I shall propose a different solution and interpret the final section of *PH* 1 (236–241) *consistently* with a specific/special empirical attitude defended by Sextus (see therefore Spinelli 2014), let me ask: if he accepts (or could accept) the general, theoretically feeble framework of ancient medical empiricism, why cannot (could not) he 'practice' *also* a coherent form of 'insulation'?

60 See therefore Sextus' 'therapeutic' conclusion in *PH* 3, 280–281.

If instead we wish to leave the bar in which we find ourselves (a place) and head for our cousin Harry's house (another place), since the two of us have planned to go to the stadium (yet another place), we can do so without having to subject to ἀπορία either the whole of our previous experiences, by virtue of which we have grown acquainted with these places, or the linguistic habits (according to the empirical τέχνη of γραμματιστική, accepted even by Sextus!) by which we refer to them, simply for the purpose of communicating effectively – calling 'bar' the bar, 'house' the house and 'stadium' the stadium.[61] The Pyrrhonist will not waste time fighting over words: φωνομαχεῖν is something quite foreign to him (cf. *PH* 1, 195 and 206). Nor, we should add, will he fight against the standard points of reference in everyday life, those sustained and upheld by συνήθεια. So he will not be engaging in any 'τοποσμαχεῖν' either, if I may use a fanciful and perhaps inappropriate neologism – one employed καταχρηστικῶς, no doubt, yet useful to counter the all too stifling tyranny of philosophical λόγος, be it that of the professional (and almost parochial) sort or that which has by now crystallised in the opinions of the ἰδιῶται.

8

In order to understand this Pyrrhonian acceptance of the elements which regulate common life, all we need to do, perhaps, is suppose that behind Sextus' pragmatically effective solution (which was probably influenced by the position of ancient medical Empiricism) we find the acceptance of a form of empirical generalisation.[62] This seems to be valid *if and only if* we reject the dogmatic tendency to establish firm, stark and necessary inferential connections; indeed, we have to limit ourselves to the acceptance of just those connections guaranteed by repeated and constant empirical observation, by that 'everyday observance' that can offer us a useful, even attractive, model of life, possibly because it can help

61 See Grgić 2011, 87: "Genuine common sense propositions are those that are immune to skeptical attack or to any kind of philosophical refutation, but not because they have some special epistemic feature, for example, because they are evident. The property of being evident is ascribed to them only after philosophical intervention in them, whether dogmatic or sceptical. Rather, they are immune to sceptical attack simply because they are useful for human life, as opposed to propositions that occur in philosophical arguments"; see also Algra 2014, 21.

62 Although I cannot enter here in any kind of discussion about this very interesting question, see at least Sextus' acceptance of the so-called 'commemorative signs': *PH* 2, 97–103 and *M* 8, 141–160.

us avoid any strong (but also rash and therefore dangerous) commitment to strictly dogmatic, even absolute, concepts and values.

Provided we do not arrogantly expect to pass judgement on every aspect of reality according to the philosophical λόγος; and provided we refuse to make a rash claim to truth, whether in the form of an absolute positive dogmatism or in that of a rigid negative one, we can perhaps not only cherish the hope of attaining an open and ever-searching intellectual condition (cf. *PH* 1, 1–3), but also – and most importantly – let ourselves go and accept our own *Gegebenheit* (or better *Vorgegebenheit*), ordering some of its aspects through a mild empiricist approach and living – in a full and straightforward sense – even *without* philosophy.

Thus, well before Wittgenstein, Sextus reached the following conclusion:

> just as it is not impossible for the person who has climbed to a high place by a ladder to knock over the ladder with his foot after his climb, so it is not unlikely that the sceptic too, having got to the accomplishment of his task by a sort of step-ladder – the argument showing that there is not demonstration – should do away with this argument,[63]

as well as with any other argument. Beyond the philosophical (and instrumental) ladder, perhaps, there may actually be a high (and at the same time very 'ordinary') place, namely: life – the uncontroversial, even customary or conventional life common to all of us in its simplest (natural and cultural) forms and in its most immediate approach.[64]

63 *M* 8, 481, trans. Bett 2005, 183; for Wittgenstein's appropriation of Sextus' metaphor see his *Tractatus*, 6, 54.

64 This paper was written as part of the wider research project PRIN MIUR 2009 ("Le filosofie post-ellenistiche da Antioco a Plotino").

Jaap Mansfeld

Doxographical Reverberations of Hellenistic Discussions on Space

1 Four *Placita* chapters and a parallel

Four chapters in ps.Plutarch's *Placita* contain *doxai* pertinent to Hellenistic discussions on space. I cite the chapter numbers and their headings: 1, 18, *On void* (Περὶ κενοῦ), 1, 19, *On place* (Περὶ τόπου), 1, 20, *On space* (Περὶ χώρας),[1] and 2, 9*,[2] *On what is outside the cosmos, whether a void exists* (Περὶ τοῦ ἐκτὸς τοῦ κόσμου, εἰ ἔστι κενόν).[3] They have not been transcribed by Eusebius, but were translated into Arabic by Qusta ibn Luqa (accessible in Hans Daiber's German translation). In Stobaeus' *Anthologium*, 1, 18, the lemmata of all four chapters have been coalesced with some changes and an omission (and in the usual Stobaean way combined with other material)[4] in a chapter with the collective heading *On void and place and space* (Περὶ κενοῦ καὶ τόπου καὶ χώρας). No trace of the heading of *Plac.* 2, 9* is found in the *Anthology* or in Photius' index. Theodoret, *Grae-*

Thanks are due to David Runia and the *corona* at Anacapri.

1 I use these renderings ('place' for τόπος and 'space' for χώρα) throughout for the sake of convenience, though the Greek terms can be, and are, often used loosely and interchangeably. Even so, τόπος as a rule indicates a more or less precise location, while χώρα is more often used for place or 'room' in a wider sense, see, e. g., S.E. *M* 10, 4 and 10, 5; at [Arist.] *MXG* 6, 979b25 – 26 and Theodoret. *Graec. aff. cur.* 5, 22 it is used in the sense of τόπος. Void, too, can be used in a 'spatial' sense. For various meanings of τόπος see Diels, 1879, 827, s.v., for χώρα as 'country' or 'region' cf. Aët. 5, 30, 1, Diels, 1879, 442b12 – 443b1, as 'place' Aët. 3, 3, 11, Diels, 1879, 369b25. See Algra 1995, 31 – 40, and for a few more examples below, p. 189 n. 32. The headings Περὶ κενοῦ and Περὶ τόπου are paralleled in Aristotle's *Physics* (where one also finds περὶ ἀπείρου) as embedded references to the subjects treated, but Περὶ χώρας is not; in fact, apart from the *Placita* and its tradition (and the passages cited above) the formula almost never refers to place or space in the strict sense, but usually means 'about a country', and is preceded by words like 'war'. Note that chs. 1, 18 – 20, inclusive of their headings, are cited and reformulated by Psellus, *Omnif. doctr.* chs. 153 – 155.

2 The asterisk refers to the text of Aëtius Book 2 as reconstructed in Mansfeld / Runia 2009b.

3 I have added a preliminary reconstructed text plus *apparatus criticus* and translation of chs. 1, 18 – 20 in an Appendix, omitting the quotations of the parallels in Aëtius, those in the wider doxographical tradition and of the putative sources, and the commentary. Ch. 2, 9* in this Appendix is cited from Mansfeld / Runia 2009b, 425.

4 *Corpus Hermeticum*, Plato's *Timaeus*, Arius Didymus on Chrysippus (and, perhaps, Arius Didymus on Aristotle).

carum affectionum curatio 4, 18, only provides excerpts (from Aëtius) corresponding to *Plac*. 1, 18, and only this chapter, again, is excerpted from ps.Plutarch by ps.Galen, *Historia philosopha* ch. 30.

Book 1 of Aëtius is concerned with the principles and elements of physics and the accompanying main concepts, while Book 2 turns to what follows therefrom.[5] But subjects and themes may sometimes overlap from Book 1 to Book 2 and conversely, at least to some extent. The lengthy and detailed ch. 1, 4, *How did the cosmos come to be*, could also have been located in the cosmological Book 2; its theme is related to those of chs. 2, 4*, *Whether the cosmos is indestructible* (the lemmata include references to its generation) and 2, 6*, *From what kind of first element did the god make the cosmos*. Aët. 1, 5, *Whether the All is one*, shares some of its material and issues with 2, 1*, *On the cosmos*. The same holds for two of the chapters at issue now, Aët. 1, 18, *On the void*, and 2, 9*, *On what is outside the cosmos, whether a void exists*. In Book 1, which is for the most part conceptualist, chapters 1, 5 and 1, 18 comprise cosmological ingredients, and so are not purely conceptual. In the proem to the whole work the questions "whether the cosmos is infinite, and whether there is something outside the cosmos" are instances of a theoretical issue in physics[6] (according to the Peripatetics) as distinguished from one in ethics. Such theoretical questions clearly may have both a general and preliminary character, i.e. a conceptual character and a more specific one, i.e. one at home in a cosmological context. Without doubt a *proprium originis*, attesting to the tenacity of the tradition, is also at issue.[7] Aristotle discusses the void both in the *Physics* and in *On the Heavens:* in the *Physics* especially at 4, 6–9, chs. 6–8 being about void *per se* and the assumption of a void outside the cosmos, ch. 9 about internal void; in *On the Heavens* in chs. 1, 9. 2, 4. 3, 7 and 4, 2.[8] Place is discussed in *Physics* 4, 1–5. The chapter headings Περὶ κενοῦ (1, 18) and Περὶ τόπου (1, 19) are paralleled in Aristotle as embedded references to the subjects treated, but Περὶ χώρας (1, 20) is not paralleled in this way – not only in Aristotle, but nowhere else in this sense.[9]

5 Aët. 2, proem.* at [Plu.] *Plac*. 886b, "Having thus completed my account of the principles and elements and what is closely associated (συνεδρευόντων) with them, I shall turn to the account concerned with the products (ἀποτελεσμάτων), starting with the most comprehensive of all things". See Mansfeld / Runia 2009b, 300–305.

6 Aët. at [Plu.] *Plac*. 874f-875a: ζητεῖται ὁμοίως εἰ ἄπειρος ὁ κόσμος ἐστὶ καὶ εἰ ἔξω τι τοῦ κόσμου ἔστι· ταῦτα γὰρ πάντα θεωρητικά.

7 See Mansfeld / Runia 2009a, 135–138.

8 *Cael*. 1, 9, 279a11–18. 2, 4, 287a11–22. 3, 7, 305b16–20 and 4, 309a6–16; also *GC* 1, 8, on the purported relation between void and motion.

9 Περὶ κενοῦ *Phys*. 4, 6, 213a12, Περὶ τόπου *Phys*. 4, 1, 208a27–28. 6, 213a14. 7, 214a16. For περὶ χώρας see above, p. 181 n. 1.

Recently the remains of a Commentary on the *Categories* preserved in the *Archimedes Palimpsest* have been published. Illustrating the fourfold classification "of things there are" at *Cat*. 2, 1, a20 – b9, the author cites two examples of a division into four, both of which are concerned with the attribution of two attributes to one subject. To facilitate understanding, these examples deal with the cosmos.[10] The first example deals with the four ways in which the attributes "generated" plus "destructible" can be predicated of "cosmos",[11] and does not concern us here. The second example deals with the four ways in which the attributes "inside (the cosmos)" and "outside the cosmos" can be predicated of "void".[12] After the restoration of the text, this passage contains four *doxai*, two of which are paralleled in ps.Plu. *Plac*. 1, 18, and one in 2, 9*. Accordingly, it agrees with Stobaeus' comprehensive treatment of the material. I discuss and compare this passage first:

> [...] as void is believed to be place bereft of body, and as we take what is 'inside' and 'outside of the cosmos' as two, we shall say, when the void, being one, is qualified according to two (predicates), that four propositions come about according to a division:
> (1) either there is void both outside and inside the cosmos, as Democritus and Epicurus held,
> (2) or neither inside not outside, as Aristotle and Plato [held],
> (3) or outside but not inside, ⟨as the followers of Zeno [held],
> (4) or inside but not outside⟩, as Strato supposed [...].[13]

It is important that the commentator calls this a presentation "according to a *division*", διαίρεσις. David Runia has emphasized that in the majority of cases the *doxai* in a *Placita* chapter are indeed presented according to a diaeresis. This en-

10 Anon. *in Cat*., Archim.-palimps. fol. 78v + 75r, 3 – 4 = p. 8, 3 – 4 Chiaradonna et alii, σαφέστερον | δὲ τὸ λεγόμενον διὰ παραδείγματος ἐπὶ τοῦ κόσμου. I quote the text from Netz / Noel / Wilson / Tchernetska 2011, 2, 327 (no changes in Chiaradonna et alii). Porphyry is now mentioned as probably being the author of the commentary, see Tchernetska / Wilson 2001, 253 – 257, more in Chiaradonna et alii (2013), 133 – 137.

11 The theme of Aët., 2, 4*.

12 Anon. *in Cat*., Archim.-palimps. fol. 78v + 75r, 20 – 28 = p. 8, 20 – 29 Chiaradonna et alii = Strato fr. 26c Sharples, see Sharples 2011, 72 – 73.

13 τοῦ γὰρ κε|[νοῦ] δοκοῦντος εἶναι τόπος {scripsi, τόπου litteris incertis codex} ἐστερημένος σώματος, | λάβοντες τὸ ἐντὸς καὶ τὸ ἐκτὸς τοῦ κόσμου ὡς δύο, | [φήσομεν, τ]οῦ κενοῦ ἑνὸς κατὰ δυεῖν φερομένου, τέσ-|[σα]ρας γενέσθαι κατὰ διαίρεσιν προτάσεις, ἢ | ἐκτὸς (καὶ) ἐντὸς τοῦ κόσμου εἶναι κενὸν ὡς Δημο|κρίτῳ τε καὶ Ἐπικούρῳ ἤρεσκεν, ἢ οὔτ' ἐντὸς | οὔτε ἐκτὸς ὡς Ἀριστοτέλει καὶ Πλάτωνι, ἢ ἐκτὸς μὲν | ἐντὸς δὲ οὔ, ⟨καθάπερ τοῖς ἀπὸ Ζήνωνος, ἢ ἐντὸς μὲν ἐκτὸς δὲ οὔ⟩ καθάπερ Στράτωνι ἔδοξεν [lacunam ex. gr. suppl. edd. ap. Sharples]. The definition of 'void' is the general one cited by Aristotle, see below, p. 186 n. 20. The translation from line 24 is Sharples', 2011, 72 – 73 (slightly modified, numbering added).

tails that a problem is cut up into a multiplicity of views, which are arranged according to affinity and contrast.[14] That the lemmata are here called propositions, προτάσεις, and not δόξαι or δόγματα or κεφάλαια, is due to the fact that this commentator on a logical treatise is concerned with the attribution of predicates. Both his examples correspond to material that was readily available in a doxographical treatise.

The four lemmata of his second example are not concerned with the bare existence, or not, of the void *per se*, as is the case at *Plac*. 1, 18, 1–3, but with the void in relation to the cosmos, as is the case at *Plac*. 1, 18, 4–6 and in all four lemmata of ch. 2, 9*.[15] Yet the heading of the latter chapter (quoted above) intimates that the issue of the existence or not of the void is included, and this is confirmed by the content of its lemmata. The first lemma of the passage in the Commentary is exactly paralleled at *Plac*. 2, 9, 4*; the second is not exactly paralleled either in ch. 1, 18 or in ch. 2, 9*, but only partially at 1, 18, 3; the third is virtually exactly paralleled at 1, 18, 5, and the fourth at 1, 18, 4 – accordingly, as pointed out already, the parallels are divided over the two *Placita* chapters.

In the world of the *Placita* and the wider doxographical tradition the Hellenistic schools and philosophers coexist (far from always peacefully) with the Presocratics, with Plato and Aristotle and their followers, with astronomers, doctors, and even with historians. In the four Aëtian chapters that concern us here the troupe consists of philosophers only:

Presocratics: the physicist followers of Thales up to Plato (1, 18, 1), the followers of Pythagoras (2, 9, 1*), Empedocles (1, 18, 2), Leucippus, Democritus, Demetrius and Metrodorus (1, 18, 3);

Plato (1, 18, 1. 1, 19, 1. 2, 9, 4*);

Aristotle (1, 18, 6. 1, 19, 2. 2, 9, 4*);

and Hellenistic philosophers: Epicurus (1, 18, 3. 1, 19, 2), Strato (1, 18, 4. 1, 19, 3), Zeno and his followers (1, 18, 5. 1, 19, 1, plus the Stoics 2, 9, 2*) and Posidonius (2, 9, 3*).

We recognize (sections of) the Successions of the Philosophers: the Ionian *diadochē*, viz. Thales to Plato, at 1, 18, 1, and the Italian *diadochē*, viz. the followers

14 Cf. Gal. *PHP* 4, 1, 15–17: προφανῶς ἀποχωρεῖ [*scil.* Chrysippus] τῆς Πλάτωνος δόξης, ὅς γ' οὐδὲ τὴν ἀρχὴν ἐν τῇ διαιρέσει τοῦ προβλήματος ἠξίωσε καὶ ταύτης ἐπιμνησθῆναι [...] ὁ δέ γ' οὐδ' οὕτως ἐγχωροῦν εἰς τρία τέμνεσθαι τὸ πρόβλημα κτλ. ("he clearly departs from Plato's view; indeed, in his division of the problem he does not even consider Plato's view worth mentioning. [examples of tripartition of this and other problems], yet he does not allow the problem to be divided into three" – transl. De Lacy, modified).

15 And in Achilles *Isag.* ch. 8: εἰ ἔστι τι ἐκτὸς κενόν, see below, the text in p. 187 n. 24.

of Pythagoras, at 2, 9. 1*. We should note that the two successions are implicitly referred to in the first lemma of their respective chapters, where they are often placed. We also note an Atomist *diadochē* ending with Epicurus, at 1, 18, 3, which is a section of the Italian or Eleatic Succession.

2 On void

The agenda with the question-types to be treated when dealing with the void was set by Aristotle at the beginning of his discussion of this issue, "the philosopher of nature has to inquire about the void, whether it is or not, and how it is, and what it is".[16] He also stipulated that a discussion of opposed views is needed: "We must begin the investigation by looking at what those who say that it [*scil.* the void] exists say, and what those who deny this, and thirdly at the common views".[17] The representative of those against in this chapter of the *Physics* is Anaxagoras (not mentioned explicitly at Aët. 1, 18, 1, but not excluded either), while those in favour are represented by "Democritus and Leucippus [cf. Aët. 1, 18, 3] and numerous other natural philosophers", and subsequently also by the Pythagoreans [cf. 2, 9, 1*].

The heading of ch. 1, 18, Περὶ κενοῦ, is an example of the bland περί-plus-genitive type that predominates in the *Placita*. That of 2, 9*, Περὶ τοῦ ἐκτὸς τοῦ κόσμου, εἰ ἔστι κενόν, tells us a bit more by means of the additional specification formulated in its second part, "whether a void exists", especially if we accept the translation by Mansfeld / Runia 2009b. A different translation is also possible, viz. "whether it (*scil.* what is outside the cosmos) is a void". But the final lemma of 2, 9*, "Plato and Aristotle (declare that) there *is no void* either *outside* the cosmos or *inside* it" shows that the translation of Mansfeld / Runia 2009b is to be preferred.

The followers of Pythagoras, the Stoics, and Posidonius, listed in 2, 9, 1–3*, variously posit the existence of a void *outside* the cosmos, so answer the ques-

16 *Phys.* 4, 6, 213a12–5: τὸν αὐτὸν δὲ τρόπον ὑπολεπτέον εἶναι τοῦ φυσικοῦ θεωρῆσαι καὶ περὶ κενοῦ, εἰ ἔστιν ἢ μή, καὶ πῶς ἔστι, καὶ τί ἐστιν, ὥσπερ καὶ περὶ τόπου.

17 *Phys.* 4, 6, 213a19–22: ἄρξασθαι δὲ δεῖ τῆς σκέψεως λαβοῦσιν ἅ τε λέγουσιν οἱ φάσκοντες εἶναι καὶ πάλιν ἃ λέγουσιν οἱ μὴ φάσκοντες, καὶ τρίτον τὰς κοινὰς περὶ αὐτῶν δόξας. Opinions are 'common' when shared by members of a group, e. g. *Phys.* 1, 4, 187a27–28: τὴν κοινὴν δόξαν τῶν φυσικῶν, *Metaph.* 2, 996b27–29: τὰς κοινὰς δόξας ἐξ ὧν ἅπαντες δεικνύουσιν, 6, 1062b25–26: σχεδὸν ἁπάντων ἐστὶ κοινὸν δόγμα τῶν περὶ φύσεως. David Runia comments (per e-litt. 22 March 2012): "I looked up Ross on this passage [*scil.* Ross 1936, 581]. His comment on 213a21–22 is interesting in not understanding how Aristotle's use of the method of topics works".

tion posed in the chapter heading in the affirmative. Plato and Aristotle, found at 2, 9, 4*, answer the question in the negative. This entails that in 2, 9* the question-type εἰ ἔστιν ἢ μή is at issue, and that both those in favour and those against have been recruited, on either side of a *diaphōnia*.[18] Though the bland heading of 1, 18 is silent on this point, the contents of the chapter's lemmata show that the question-type of existence is certainly at issue here too: the physicist followers of Thales up to Plato and Empedocles in 1, 18, 1–2 reject the void, while the philosophers listed in 1, 18, 3–6 posit the existence of the void in various ways. And while in 2, 9* the purported void *inside* the cosmos is only mentioned in a final lemma that denies its existence, the possibility of a void *inside* the cosmos is admitted in 1, 18, 4, under the name-label of Strato, but denied by Zeno and his followers.

The question-type of the πῶς ἔστι (attribute) is represented by two categories. The first half of the heading of 2, 9*, "On what is outside the cosmos", clearly pertains to the (originally Aristotelian) category of the ποῦ, of *place*, and the first three lemmata of the chapter accordingly locate the void outside the cosmos; the varieties are something that is of unknown size, or something infinite, or something just large enough to expand into. The nature of these varieties shows that also the category of the ποσόν, of *quantity*, is involved. These two categories are also at issue in 1, 18. *Quantity* in 1, 18, 3, where the atoms are infinitely many and the void infinite in size (number and size being standard subdivisions of this category), in 1, 18, 5, where the void outside the cosmos is infinite (*scil.* in size), and in 1, 18, 6, where (cf. 2, 9, 3*) it is just large enough to breathe into. *Place* is relevant to 1, 18, 4: no void outside but possibly inside the cosmos; in 1, 18, 5, no void inside but infinite void outside the cosmos;[19] and 1.18.6, a void outside the cosmos large enough to sustain breathing.

The category of οὐσία, *substance*, and the question-type τί ἐστι, "what is it", are not at issue in either ch. 1, 18 or 2, 9*. For we are not told what the void is, that is, are not provided with a definition, but only hear where it is, or may be, located, and/or how large it is – provided it does exist. For a definition[20] we have

18 For the question-types of *An. Post*. 2, 1 and their influence upon the *Placita* see Mansfeld / Runia 2009a, 6–7, with references to earlier discussions.

19 This Stoic *doxa* recurs in a different setting in the chapter *On the cosmos*, Aët. 2, 1, 9* (= *SVF* 2, 522): οἱ Στωικοὶ διαφέρειν τὸ πᾶν καὶ τὸ ὅλον· πᾶν μὲν γὰρ εἶναι σὺν τῷ κενῷ τῷ ἀπείρῳ, ὅλον δὲ χωρὶς τοῦ κενοῦ τὸν κόσμον. Paralleled at Achilles *Isag*. 5 (= *SVF* 2, 523), and S.E. *M* 9, 332 (= *SVF* 2, 524).

20 Such as that of the authorities cited at Arist. *Phys*. 4, 1, 208b26–27: τὸ ... κενὸν τόπος ἂν εἴη ἐστερημένος σώματος, or 4, 7, 213b31: δοκεῖ δὴ τὸ κενὸν τόπος εἶναι ἐν ᾧ μηδέν ἐστι.

to go to ch. 1, 20, 1, under the name-label of Zeno and his followers: τὸ μὲν κενὸν εἶναι ἐρημίαν σώματος, "the void is a vacancy of body".

Surprisingly enough there is no reference in 1, 18 and 2, 9* (or, for that matter, in 1, 23, *On motion*) to the well-known view of Melissus or the Atomists that motion is only possible if *a* void exists, or because of the existence of the void,[21] which plays such an important part in Aristotle's discussion of the issue. Its inclusion would have permitted the deployment of the question-type of the *cause* or explanation, διὰ τί, familiar of course from the *Problemata* literature and represented four times with this formula in the headings of other *Placita* chapters, and once in the text.[22]

The Hellenistic philosophers mentioned in this chapter are Epicurus (firmly anchored to an earlier tradition as the last representative of a Succession of Atomists beginning with Leucippus), Strato, and Zeno and his followers. We should recall that ps.Plutarch omits the Strato lemma. The *doxa* in the lemma dealing with Epicurus, 1, 18, 3, Ἐπίκουρος τὰ μὲν ἄτομα ἄπειρα τῷ πλήθει, τὸ δὲ κενὸν ἄπειρον τῷ μεγέθει, is virtually identical with part of the *doxa* attributed to Epicurus at 1, 3, 18, Ἐπίκουρος ... εἶναι δὲ καὶ αὐτὸ τὸ κενὸν ἄπειρον καὶ τὰ σώματα ἄπειρα. That is to say, notwithstanding the presence of other Atomists at 1, 18, 3, the *doxa* is Epicurean (as formulated in the *Placita*) rather than Leucippean or Democritean (as in Aristotle), or Metrodorean.[23] The *doxa* of the lemma has been updated. Accordingly, the Hellenistic philosophy of nature is represented by the two rival schools, that of Epicurus and that of Zeno, characterized as distancing themselves, each in its own way, from the Ionian tradition from Thales to Plato (and including Empedocles); with a small similar role for Strato. One would have expected Aristotle to join Plato, as happens at 2, 9, 4*, but in the present chapter – if my preference for the lemma as transmitted in P is right – he is turned into a (quasi)-Pythagorean, and made to join the company of the Hellenistic supporters of the void. In the parallel chapter in the related doxography of Achilles, *Isag.* ch. 8, we find the same positions on either side of the *diaphōnia:*[24] the views of Epicurus and the Stoics (the latter in a Posidonian-

21 E.g., Meliss. fr. 68B7 (7–10) D.-K. and *ap.* Arist. *Phys.* 4, 6, 213b12–14; Leucipp. fr. 67A7 D.-K. *ap.* Arist. *GC* 1, 8, 325a23–32; Epic. *Ep. Hdt.* 67.

22 The headings of Aët. *Plac.* 2, 32 (also in second position, and the only part cited at [Gal.] *Hist. phil.* ch. 70), 5, 9. 5, 14 and 5, 18; in the text at 1, 3, 2. More often with πῶς, e.g. 3, 15: Περὶ θαλάττης, πῶς συνέστηκεν καὶ πῶς ἐστι πικρά, which in [Gal.] *Hist. phil.* ch. 87 becomes Περὶ θαλάττης, διὰ τί ἁλμυρά ἐστιν.

23 Cf. Aët. 1, 3, 15: Λεύκιππος ... τὸ πλῆρες καὶ τὸ κενόν; 1, 3, 16: Δημόκριτος τὰ ναστὰ καὶ κενόν; 1, 3, 17: Μητρόδωρος ... τὰ ἀδιαίρετα καὶ τὸ κενόν.

24 See above, p. 184 n. 15.

esque version) are opposed to that of Anonymi who deny the existence of the void; their arguments suggest that Aristotle may be behind them.

3 On place

The agenda with the question-types to be dealt with in ch. 1, 19 was set by Aristotle, just as for ch. 1.18, and in identical terms.[25] Our chapter Περὶ τόπου has only three lemmata against the six lemmata of ch. 1, 18. It contains three different definitions of place, with the name-labels Plato, Aristotle, and Strato, and so is concerned with the category of substance and the question-type of "what is it". The bland heading of the standard περί-plus-genitive-type could easily have accommodated the extensions τί ἔστιν or τίς ἡ τούτου οὐσία, which occasionally appear in headings of *Placita* chapters.[26]

The question-type of the attribute (πῶς ἔστι) is also at issue, viz. in the various qualifications of the idea of place in each of the three lemmata. And because it is "about place", the chapter is, obviously, also concerned with the category of place–*per se*, so to speak, but also, paradoxically, with the place of "place". For two opposed *doxai* are cited at 1, 19, 2–3, the first of which (under the name-label of Aristotle) places place at the periphery of the object, as "the outermost of what surrounds connecting with what is surrounded",[27] while the other (name-label Strato) locates it inside, as "the interval between what surrounds and what is surrounded".[28] The question-type of existence, which plays such an important part in Aristotle's account of place, is not at issue in the chapter.

In his discussion of τόπος in the *Physics* Aristotle lists exactly four possible denotations: (1) form (μορφή or εἶδος), (2) matter (ὕλη), (3) the interval between the extremities, and (4) the extremities themselves, and then argues in favour of the fourth. These different possibilities are also listed by, e.g., Sextus Empiricus and Simplicius,[29] and so may be seen as having become standard. Of these four, three are present in our chapter of the *Placita:* (2) matter, (4) the extremities, and (3) the interval between the extremities. So the first listed, τόπος as form, is lacking, presumably because it had never been adopted. Aristotle himself cites a

25 *Phys.* 4, 1, 208a27–29: ὁμοίως δ' ἀνάγκη καὶ περὶ τόπου τὸν φυσικὸν ὥσπερ καὶ περὶ ἀπείρου γνωρίζειν, εἰ ἔστιν ἢ μή, καὶ πῶς ἔστι, καὶ τί ἐστιν.

26 Cf., e.g., 1, 3: Περὶ ἀρχῶν τί εἰσιν; 2, 11: Περὶ οὐρανοῦ, τίς ἡ τούτου οὐσία.

27 My transl.

28 Strato fr. 26b Sharples, transl. Sharples 2011, 73 (not including Gottschalk's supplement).

29 Arist. *Phys.* 4, 4, 211b6–9 and elsewhere, S.E. *M* 10, 24, Simp. *Ph.* 571, 21–26.

view of Plato as instantiating (2), ὕλη, while his own view turns out to be (4) – see below, p. 190.

The first lemma of 1, 19 is "Plato (said place is) what partakes (τὸ μεταληπτικόν)[30] of the Forms as a sort of wet-nurse and recipient; he has metaphorically denoted matter (τὴν ὕλην)". This is a virtually verbatim reproduction of a conflation of two passages in Aristotle (with the addition of Platonic designations of χώρα) that provide a critical account of Plato's view of space. Interpreting the third principle of the *Timaeus* not entirely correctly,[31] he affirms that

> Plato says in the *Timaeus* that matter (τὴν ὕλην) and space (τὴν χώραν) are the same; for what partakes (τὸ ... μεταληπτικόν) and space (τὴν χώραν) are one and the same thing. His account of what partakes differs in the *Timaeus* and the so-called Unwritten Doctrines, but he still declared that place and space are the same (ὅμως τὸν τόπον καὶ τὴν χώραν τὸ αὐτὸ ἀπεφήνατο). [...] One has to inquire of Plato [...] why the Forms and numbers are not in place, if place is what partakes [*scil.* of them] (εἴπερ τὸ μεθεκτικὸν ὁ τόπος).[32]

Our lemma combines the phrase about participation in the Forms with the identification of what participates as place. Aristotle adds that Plato is the only one among his predecessors who provided a definition of τόπος, as the others are merely assuming its existence.[33]

We duly note that the lemma at 1, 19, 1 belongs with the set of *Placita* abstracts derived not directly from the original source, but from Aristotle's critical reportage. By this interpretative move Plato's view of τόπος is made to dovetail into the pattern of the four options, filling the slot of (2), "matter". This background also helps to explain the presence of the lemma under the heading Περὶ τόπου rather than under Περὶ χώρας. We also note that Aristotle's claim (not reproduced in the lemma) that according to Plato place and space are one and the same preludes upon the theme of Aët. 1, 20, where the differences, or lack of difference, of the reference(s) of void, place, and space are at issue. The

30 Plato's term is μεταλαμβάνον (*Tim.* 52b).

31 Cf. also further down, and *Phys.* 4, 7, 214a13–14: διό φασίν τινες εἶναι τὸ κενὸν τὴν τοῦ σώματος ὕλην (οἵπερ καὶ τὸν τόπον τὸ αὐτὸ τοῦτο), λέγοντες οὐ καλῶς.

32 Arist. *Ph.* 4, 2, 209b11–18 plus 209b33–210a2; for a defense of Aristotle's criticism see Algra 1995, 111–118. Part of the present lemma is paralleled at 1, 9, 4, 5, Πλάτων τὴν ὕλην [...] δεξαμενὴν δὲ τῶν εἰδῶν καὶ οἷον τιθήνην κτλ. Maybe Aristotle also thought of phrases such as *Tim.* 52b, φαμὲν ἀναγκαῖον εἶναί που τὸ ὂν ἅπαν ἔν τινι τόπῳ καὶ κατέχον χώραν τινά. It is true that in the *Timaeus* Plato also uses χώρα in a general sense that makes it about equivalent to τόπος, and he often enough uses the latter term too. Aristotle himself uses τόπος and χώρα together and in the same sense at *Phys.* 4, 1, 208b7 and b32–33 in a loose and introductory way (cf. above, p. 181 n. 1).

33 The question-types of 'what is it' and 'is it?'.

suppressed or at any rate hidden past of the lemma apparently contributes to the thematic agenda of our triad of *Placita* chapters.

Aristotle's definition at 1, 19, 2, "(it is) the outermost of what surrounds connecting with what is surrounded", is a shorter version of one of the formulae in *Physics* Book 4, ἀνάγκη τὸν τόπον εἶναι ... τὸ πέρας τοῦ περιέχοντος σώματος καθ' ὃ συνάπτει τῷ περιεχομένῳ.[34] It corresponds to the last of the four options listed above, i.e., (4) the extremities themselves.

The definition attributed to Strato at 1, 19, 3, "(it is) the interval between what surrounds and what is surrounded", corresponds to the third of these options, (3) the interval between the extremities.

Accordingly, the theme and structure of this chapter, as well as the gist of the alternative definitions it provides derive without exception (but with some loss of issues to be discussed) from Aristotle's dialectical overview in Book 4 of the *Physics*. The only Hellenistic philosopher present in 1, 19, Strato, must have been included because he actually defended theoretical position (3), the interval between the extremities. We may assume that the Stoic[35] and Epicurean definitions are not cited because they can be subsumed under (3),[36] but the name-labels could of course have been added to the lemma. In other words, it is Strato, and Strato alone, who is made to represent Hellenistic philosophy here, so it is true to form, but nevertheless unsatisfactory, that ps.Plutarch omitted this lemma.[37]

4 On space

For the agenda of this chapter there are no antecedents in Aristotle, apart from his point that Plato identifies τόπος and χώρα. The bilemmatic ch. 1, 20, Περὶ χώρας, provides Hellenistic views only, with the name-labels Zeno and his followers and Epicurus. No Presocratics, Plato, or Aristotle this time. The chapter, a sort of semantic appendix to chs. 1, 19–20, is an example of the smallest type of *Placita* chapter in which a conflict of opinion can still be presented. The head-

34 Arist. *Phys.* 4, 4, 212a5–7.

35 Actually, a brief version of the Stoic definition is found in the next chapter, 1, 20, 1: Ζήνων καὶ οἱ ἀπ' αὐτοῦ ... τὸν ... τόπον τὸ ἐπεχόμενον ὑπὸ σώματος.

36 Cf. Simp. *Ph.* 571, 21–26: καί φησιν [*scil.* Arist. 211b6–9] ὅτι "τέτταρά ἐστιν, ὧν ἀνάγκη τὸν τόπον ἔν τι εἶναι". ἢ γὰρ τὸ εἶδος τοῦ ἐν τόπῳ ἢ ἡ ὕλη αὐτοῦ ἢ τὸ διάστημα τὸ μεταξὺ τῶν ἐσχάτων τοῦ περιέχοντος τὸν τόπον ἀνάγκη εἶναι, ὃ τινὲς καὶ τῶν προτέρων ὡς οἱ περὶ Δημόκριτον καὶ τῶν ὑστέρων ὡς οἱ περὶ Ἐπίκουρον (= fr. 273 Us.) καὶ οἱ Στωικοί (= *SVF* 2, 508).

37 Of the fifteen references to Strato in the *Placita* only six are in ps.Plutarch.

ing, again of the bland περί-plus-genitive type, significantly fails to represent the contents. *Qua* heading of a treatment or discussion of space or place this formula only occurs again as late as Psellus.[38]

The lemmata are not concerned with a multiplicity of views about χώρα alone, but with the difference between the Stoics and Epicurus regarding their use of the three interconnected terms κενόν, τόπος, and χώρα.[39] It is clear that the specifically Hellenistic theme of the chapter called for separate treatment. Its heading was formulated *pour le besoin de la cause*, that is, to stress the link with the two previous chapters, the term χώρα being still available (so a fine distinction with the meaning of κενόν and τόπος is maintained in the heading). We have of course seen that the κενόν is dealt with in ch. 1, 18 (and then in 2, 9*), and τόπος in ch. 19. Zeno and his followers plus Epicurus are among the authorities cited in ch. 1, 18, but are absent in ch. 1, 19. Brief definitions of each of these three concepts are cited for the Stoics,[40] but not for Epicurus. As a matter of fact we are not told at all what Epicurus meant by these terms, and at ch. 1, 18, 3 we were merely informed about the infinity of the void according to Epicurus, not about what it is according to him.

The contrast between Stoics and Epicurus as to the semantic distinctions or lack of distinction between the three terms at issue is paralleled in Sextus,[41] but with an important difference. Aëtius posits that the Stoics attributed a different meaning to each term, while Epicurus used them interchangeably. But Sextus, who mentions Epicurus first and the Stoics in the second place, attributes to Epicurus distinctions similar to those made by the Stoics. The ἀναφὴς φύσις or 'intangible nature' (note that the word ἀναφής does not occur in the *Placita*) according to Sextus can be called void when vacant of body, place when occupied by body, and space when bodies are moving through it, for it is the "same nature": "generically the name is 'intangible nature'".[42] These subtle dis-

38 Psellus, *Omnif. doctr.* ch. 155 (see above, p. 181 n. 1). This chapter first defines χώρα as the space between the numbers in the number series, and next rephrases the text of Aët. 1, 20, 1 (*DG* p. 317, 13–14) at [Plu.] *Plac*. 1, 20, 1, see Westerink *ad loc*.

39 There is here no reference to the Stoic view that τόπος and κενόν are listed together with ἐπιφάνεια, γραμμή, and χρόνος as incorporeals (Aëtius writes τὰ τοῖς σώμασι προσεοικότα at 1, 16, 4 (= *SVF* 2, 482)).

40 That of τόπος as τὸ ἐπεχόμενον ὑπὸ σώματος is paralleled in one of the definitions without name-label of σῶμα as τὸ κατέχον τόπον at 1, 13, 1 (ps.Plutarch only).

41 S.E. *M* 10, 2–4 (= add. *ad* fr. 271 Us. + *SVF* 2, 505).

42 S.E. *loc. cit.* (above, n. 41): προληπτέον, ὅτι κατὰ τὸν Ἐπίκουρον τῆς ἀναφοῦς καλουμένης φύσεως τὸ μέν τι ὀνομάζεται κενόν, τὸ δὲ τόπος, τὸ δὲ χώρα, μεταλαμβανομένων κατὰ διαφόρους ἐπιβολὰς τῶν ὀνομάτων, ἐπείπερ ἡ αὐτὴ φύσις ἔρημος μὲν καθεστηκυῖα παντὸς

tinctions are not really supported by the evidence of Epicurus' authentic remains. An unfortunately too terse passage in the *Letter to Herodotus* speaks of "what we call 'void', 'space' and 'intangible nature'"– so here the term τόπος is absent, and there is no intimation either of distinctions between the three terms that *are* listed.[43] Clearly, in the *Letter* "intangible nature" is not an overarching concept, but is placed on a par with space and void. The conceptual equality of void, place and space at 1, 20, 2[44] agrees with that of the *Letter*. Checks are possible only where the original works are extant, as is the case for Plato, Aristotle, and Epicurus in connection with chs. 1, 18 – 20 and 2, 9*. I am therefore disinclined to underrate the evidence of the *Letter to Herodotus* and the parallel evidence of Lucretius.[45] Nevertheless one should acknowledge that the difference between the Stoics and Epicurus may have been blown up in Aëtius *more doxographico* the better to formulate a *diaphōnia*.[46]

If we did not have Stobaeus we would perhaps be puzzled by ps.Plutarch's monolemmatic version of the chapter. He only has the first lemma, in which he has inserted the name-label Epicurus. Adding one or more name-labels to a *doxa* and omitting the other *doxai* they derive from is a standard technique of epitomization in ps.Plutarch. To be sure, this identification of the Epicurean view with that of the Stoics recalls Sextus Empiricus' account. But without doubt an intelligent intention of this kind should not be attributed to ps.Plutarch, who merely "ein 200 Jahre älteres Buch klein macht".[47]

σώματος κενὸν προσαγορεύεται, καταλαμβανομένη δὲ ὑπὸ σώματος τόπος καλεῖται, χωρούντων δὲ δι' αὐτῆς σωμάτων χώρα γίνεται.

43 Epic. *Ep. Hdt.* 40 εἰ ⟨δὲ⟩ μὴ ἦν ὃ κενὸν καὶ χώραν καὶ ἀναφῆ φύσιν ὀνομάζομεν. Long / Sedley 1987, at T. 5 A accept Usener's conjecture τόπος δὲ εἰ μὴ ἦν, ὄν, for which I see no need. Lucretius' formula 1, 334 *locus … intactus inane vacansque*, though using *locus* and not *spatium*, also puts the concepts on the same footing (cf. Lucr. 1, 520 – 524, where one after another we find *inane*, *loca*, *spatium*, *vacuum … inane*).

44 Long / Sedley 1987 T. 5C translate "the difference between void, place and room is one of name" (see Diels *ad loc.*, 1879, 770: "verbis differre") – so not of reference.

45 See also the discussion of the evidence in Verde 2010, 96 – 97.

46 The present paper is not the place to enter into a discussion of the distinctions Epicurus may have advocated in order to neutralize Aristotle's criticism of the concept of void, for which see, e. g., Long / Sedley 1987, 1, 29 – 31.

47 Thus Diels in a letter dated January 1, 1880, in: Braun / Calder III / Ehlers 1995, 60.

5 Epilogue

The reverberations in the *Placita* of Hellenistic views on space, that is to say on void, space, and place, fail to provide a satisfactory picture, let alone a complete one. I have tried to show that the agenda and methodology of the discussion are for the most part originally Aristotelian. In the doxographical chapters discussed in the present paper the views of the Hellenistic philosophers, that is, of the Stoics, Epicurus, and Strato (to the exclusion of other Peripatetics, and of Academics or Platonists), fall within a spectrum that includes representatives of the Presocratics, as well as Plato and Aristotle. They are clearly represented (as of course also elsewhere in the *Placita*) as belonging with the mainstream tradition of Greek philosophy, which at the very least may serve as a reminder not to treat them in isolation, but to recognize that the problems they are dealing with or had to deal with already had a history.

In our attempt to understand the information provided in these chapters we have noted the extreme economy of the contents of the lemmata. I am not only thinking of their proverbial and almost telegrammatic brevity, which deprives us of certain finer and perhaps philosophically more interesting aspects of the views at issue, but also of the fact that what is in the lemma of one chapter is often indispensable enough or at least most helpful for understanding what is in a lemma of another chapter. Repetition is as a rule not favoured, though there are exceptions. On the other hand crucial information is sometimes not found in the chapter where one would expect to find it, but in a related chapter nearby. We have noted, for example, that the Stoic definition of void occurs in 1, 20 instead of 1, 18. The reason often is that in the other location an effective (or more effective) *diaphōnia* can be obtained, as is clearly the case in 1, 20.

Further information is provided not explicitly but implicitly, that is, by means of the artful arrangement of lemmata according to contrast and affinity, which reveals how and where and to what extent philosophers (or scientists) disagreed or (partially) agreed with each other. But one should realize that both affinities and contrasts may have been exaggerated in order to heighten the effect of the presentation, or even to provide an extra stimulus for discussion.

Some subjects were more popular, or believed to be more interesting, than others. The contents of individual Aëtian *Placita* chapters may differ substantially in respect of the variety, multiplicity, and length of the *doxai* that are included. The three chapters on void, place, and space, when combined and considered *sub specie* of their interrelated themes, are of middling length and variety (those on the principles and the gods in Book I and on aspects of human biology in Book V are very much longer and more detailed). We have moreover noted that

from ch. 1, 18 to ch. 1, 20, passing through ch. 1, 19, their individual size diminishes from six to three to two lemmata in Aëtius, and from five to two to one in his epitomator ps.Plutarch, while ch. 2, 9* has again four lemmata. In Aëtius this is not so much a matter of diminishing interest as of a scarcity of available alternatives, while ps.Plutarch was obliged to be even more brief. Even so, *quand on n'a pas ce qu'on aime il faut aimer ce qu'on a*.

Appendix: Texts Aëtius 1, 18 – 20 and 2, 9*

Sigla

P traditio Pseudo-Plutarchi

P^{byz} : manuscripti Byzantini

Family	*Manuscript*	*Date*	*Diels*	*Mau*	*Lachenaud*
I	Mosquensis 339	12th century	A	M	M
II	Marcianus 521	13th/14th century	B	𝔐	m
III	(Planudei)			*Π*	*Π*
α	Ambrosianus 859	shortly before 1296	–	α	α
A	> Parisinus 1671	1296	–	A	A
γ	> Vaticanus 139	shortly after 1296	–	γ	γ
E	> Parisinus 1672	shortly after 1302	C	E	E

P^{G} : Pseudo-Galenus = editio Diels

Manuscript	*Date*	*Diels DG*
Laurentianus LXXIV 3	12th/13th century	A
Laurentianus LVIII 2	15th century	B
Nicolai Regini versio latina	1341	N

P^{Q} : Qusta Ibn Luqa translatio Araba = editio Daiber

S Johannes Stobaeus = editio Wachsmuth

Manuscript	*Date*	*Diels*	*Wachsmuth*
Farnesinus III D 15	14th century	F	F
Parisinus 2129	15th century		P
Laurentianus	14th century	D	L

T Theodoretus = editio Raeder

P^{s} Psellus = editio Westerink

Aëtii qui dicitur Naturalium placitorum liber primus

Caput 18

P^{B}: [Plut.] *Plac*. 883ef; *DG* pp. 315, 19 – 317, 21 Diels – **P^{G}:** [Gal.] *Hist. Phil.* c. 30, *DG* p. 616, 15 – 21 Diels; **P^{Q}:** Qusta ibn Luqa pp. 128 – 129 Daiber – **P^{Ps}:** Psellus *Omnif. doctr.* c. 153 Westerink – **S:** Stobaeus *Ecl.* 1, 18a + 1, 18b + 1, 18c +1, 18d , pp. 155, 18 – 156, 4 + 156, 8 – 28 Wachsmuth– **T:** Theodoretus *CAG* 4, 14, pp. 103, 25 – 104, 7 Raeder

Reconstructed text

Titulus		ιή. Περὶ κενοῦ (P,S)
§1	[1]	οἱ ἀπὸ Θάλεω φυσικοὶ πάντες μέχρι Πλάτωνος τὸ κενὸν ὡς
	[2]	ὄντως κενὸν ἀπέγνωσαν· (P1,S1)
§2	[1]	Ἐμπεδοκλῆς· οὐδέ τι τοῦ παντὸς κενεὸν πέλει οὐδὲ περιτ-
	[2]	τόν. (P2,S2,T2)
§3	[1]	Λεύκιππος Δημόκριτος Δημήτριος Μητρόδωρος Ἐπίκουρος τὰ
	[2]	μὲν ἄτομα ἄπειρα τῷ πλήθει, τὸ δὲ κενὸν ἄπειρον τῷ
	[3]	μεγέθει. (P3,S3,T1)
§4	[1]	Στράτων ἐξωτέρω τοῦ κόσμου μὴ εἶναι κενόν, ἐνδοτέρω δὲ
	[2]	δυνατὸν γενέσθαι. (S4,T4)
§5	[1]	Ζήνων καὶ οἱ ἀπ’ αὐτοῦ ἐντὸς μὲν τοῦ κόσμου μηδὲν εἶναι κενόν,
	[2]	ἔξω δ’ αὐτοῦ ἄπειρον. (P4,S6,T3)
§6	[1]	Ἀριστοτέλης τοσοῦτον εἶναι τὸ κενὸν ἐκτὸς τοῦ κόσμου, ὥστ’
	[2]	ἀναπνεῖν εἰς αὐτὸ τὸν οὐρανόν· ἔνδοθεν γὰρ εἶναι τόπον
	[3]	πύρινον. (P5)

§1 Thales frr. 153, 350, 488 Wöhrle, physici —; **§2** Empedocles 31B13 D.-K.; **§3** Leucippus 67A15 D.-K.; Democritus fr. 187 Luria, Demetrius Laco pp. 19–20 de Falco; Metrodorus —; Epicurus fr. 295 Us.; **§4** Strato frr. 54–55 Wehrli **§5** Zeno Stoici – ; **§6** cf. Aristoteles (de Pythagoreis) *Phys.* 4, 6, 213b22–24 et fr. 201 [3]Rose

titulus Περὶ κενοῦ P^{BQPs} : Περὶ κενοῦ καὶ τόπου [i.q. titulus 1, 19] καὶ χώρας [i.q. titulus 1, 20] S^{PhotL}

§1 [1] Θάλεω $P^{BQ}S$: Πυθαγόρου P^{G} ‖ ante φυσικοὶ verba καὶ οἱ add. P^{G} ‖ [1–2] οἱ ... ἀπέγνωσαν PS: οἱ δὲ ἄλλοι ἅπαντες τοῦτόν γε ἄντικρυς κωμῳδοῦσι τὸν λόγον T ‖ ὡς ... κενὸν S, *fest* P^{Q} : om. P^{B} ‖ [2] ἀπέγνωσαν $P^{B}S$: ἐν τῷ κόσμῳ κενὸν εἶναι λέγουσιν P^{G}, *waren von (der Existenz) des leeren Raumes überzeugt* [fort. legit ἐπέγνωσαν] P^{Q}
§2 lemma non habet P^{G} ‖ [1] οὐδέ S : οὐδὲν P^{BQ} ‖ κενεὸν T: κενὸν $P^{B}S$
§3 [1] Λεύκιππος ... Ἐπίκουρος P^{BQ} : Δημοκρίτου καὶ ἑτέρων Λεύκιππος S^{P}, (Δ)ημόκριτος Λεύκιππος S^{F}, Δημήτριος Μητρόδωρος om. P^{G}, Δημήτριος ut dittographiam (Δημ-οκρ.) del. Crönert
§4 lemma non habet P ‖ [1] post ἐξωτέρω verba μὲν ἔφη add. S
§5 [1] Ζήνων ... αὐτοῦ S : οἱ Στωικοὶ P^{BG}, οἱ δὲ Στωικοὶ T
§6 lemma non habet T ‖ [1–2] pro lemmate aetiano substituit S Ἀριστοτέλης ἐν τετάρτῳ Φυσικῆς γράφει· ‘εἶναι δέ φασιν οἱ Πυθαγόρειοι κενὸν καὶ ἐπεισιέναι αὐτὸ τῷ οὐρανῷ ἐκ τοῦ ἀπείρου πνεύματος ὡς ἀναπνέοντι.’ ἐν δὲ τῷ Περὶ τῆς Πυθαγόρου φιλοσοφίας γράφει τὸν μὲν οὐρανὸν εἶναι ἕνα, ἐπεισάγεσθαι δὲ ἐκ τοῦ ἀπείρου χρόνον τε καὶ πνοὴν καὶ τὸ κενόν, ὃ διορίζει ἑκάστων τὰς χώρας ἀεί. καὶ ἐν ἄλλοις λέγει, τόπον εἶναι τὸ τοῦ περιέχοντος πέρας ἀκίνητον κτλ. ‖ [2] εἰς αὐτὸ P^{G} : om. P^{BQ} ‖ [2–3] ἔνδοθεν ... πύρινον P^{G} : εἶναι γὰρ αὐτὸν πύρινον P^{BQ}

1, 18. On void

§1 All physicists from Thales until and including Plato rejected the void in the real sense of the word;

§2 Empedocles: 'and of the All nothing is empty or superfluous'.

§3 Leucippus Democritus Demetrius Metrodorus Epicurus (say that) the atoms are infinite in number, and the void infinite in size.

§4 Strato said that there is no void outside the cosmos, but that it is possible for it to occur inside.

§5 Zeno and his followers (say) that inside the cosmos there is no void at all, but outside it (*scil.* the cosmos) it is infinite.

§6 Aristotle said that the void outside the cosmos is exactly large enough for the heavens to breathe into it; for inside there is a fiery place.

Caput 19

P^{B}: [Plut.] *Plac.* 884ab; *DG* p. 317, 23–29 Diels – **P^{Q}:** Qusta ibn Luqa pp. 130–131 Daiber – **P^{Ps}** : Psellus *Omnif. doctr.* c. 154 Westerink—
S: Stobaeus *Ecl.* 1, 18, 4c + 1, 18, 1b; pp. 160, 17–19 +156, 4–6 Wachsmuth

Reconstructed text

Titulus		ιθ′. Περὶ τόπου (P,S)
§1	[1]	Πλάτων τὸ μεταληπτικὸν τῶν εἰδῶν, ὅπερ εἴρηκε μεταφο-
	[2]	ρικῶς τὴν ὕλην, καθάπερ τινὰ τιθήνην καὶ δεξαμενήν. (P1,S2)
§2	[1]	Ἀριστοτέλης τὸ ἔσχατον τοῦ περιέχοντος συνάπτον τῷ περιεχο-
	[2]	μένῳ. (P2)
§3	[1]	Στράτων τὸ μεταξὺ διάστημα τοῦ περιέχοντος. (S1)

§1 Plato cf. *Tim.* 49a. 50ad. 53a; **§2** Aristoteles cf. *Phys.* 4, 4, 211b10–12, *Cael.* 4, 4, 310b7–8; **§3** Strato fr. 55 Wehrli

titulus Περὶ τόπου P^{BQPs} : Περὶ κενοῦ [i.q. titulus 1, 18] καὶ τόπου καὶ χώρας [i.q. titulus 1, 20] S^{PhotL}, καὶ χώρας om. S^{FP}

§1 [1] post Πλάτων add. *glaubte, der Ort ist* P^{Q}, τόπον εἶναι S ‖ [2] καθάπερ ... δεξαμενήν P^{B}S : *das für die Materie empfänglich ist* P^{Q}
§2 lemma non habet S ‖ [1] post Ἀριστοτέλης add. *glaubte; der Ort ist* P^{Q}
§3 lemma non habet P ‖ [1] Στράτων ... μεταξὺ scripsimus : Στράτων ἐξωτέρω μὲν ἔφη τοῦ κόσμου μὴ εἶναι κενόν, ἐνδοτέρω δὲ δυνατὸν γενέσθαι [i.q. 1, 18, 4]. —τόπον δὲ εἶναι τὸ μεταξὺ δι-

άστημα τοῦ περιέχοντος καὶ τοῦ περιεχομένου S ‖ post διάστημα verba τῶν ἐσχάτων add. Gottschalk probat Sharples

1, 19. On place

§1 Plato (said place is) what partakes of the Forms as a sort of wet-nurse and recipient. He has metaphorically denoted matter.

§2 Aristotle (said it is) the outermost of what surrounds connecting with what is surrounded.

§3 Strato (said it is) the interval between what surrounds and what is surrounded.

Caput 20

P^B: [Plu.] *Plac*. 884ab; *DG* p. 317, 30 – 318, 2 Diels – **P^Q:** Qusta ibn Luqa pp. 130 – 131 Daiber – **P^{Ps} :** Psellus *Omnif. doctr.* c. 155 Westerink—
S: Stobaeus *Ecl*. 1, 18, 1d + 1, 18, 4a; pp. 156, 27 – 157, 3 + 160, 6 – 7 Wachsmuth

Reconstructed text

Titulus		ιθ′. Περὶ χώρας (P,S)
§1	[1]	Ζήνων καὶ οἱ ἀπ’ αὐτοῦ διαφέρειν κενόν, τόπον, χώραν· καὶ τὸ
	[2]	μὲν κενὸν εἶναι ἐρημίαν σώματος, τὸν δὲ τόπον τὸ ἐπεχόμενον
	[3]	ὑπὸ σώματος, τὴν δὲ χώραν τὸ ἐκ μέρους ἐπεχόμενον, ὥσπερ ἐπὶ
	[4]	τῆς τοῦ οἴνου πιθάκνης. (P1,S1)
§2	[1]	Ἐπίκουρος ὀνόμασι πᾶσιν παραλλάττειν κενὸν τόπον χώραν. (S2)

§1 Zeno *SVF* 1, 95; 2, 504; **§2** Epicurus fr. 271 Us.

titulus Περὶ χώρας P^{BQPs} : Περὶ κενοῦ [i.q. titulus 1, 18] καὶ τόπου [i.q. titulus 1, 19] καὶ χώρας S^{PhotL}, καὶ χώρας om. S^{FP}

§1 [1] Ζήνων ... αὐτοῦ S : οἱ Στωικοὶ καὶ Ἐπίκουρος P^{BQ}, οἱ Στωικοὶ ab Arnim qui nomen Epicuri om. ‖ Ζήνων ... διαφέρειν scripsimus : Ζήνων καὶ οἱ ἀπ’ αὐτοῦ ἐντὸς μὲν τοῦ κόσμου μηδὲν εἶναι κενόν, ἔξω δ’ αὐτοῦ ἄπειρον [i.q. A 1, 18, 5] —διαφέρειν δὲ κενόν κτλ. S ‖ [2 – 3] τόπον ... σώματος P^BS : *der Ort das einen Körper umfassende* P^Q ‖ [2] ἐπεχόμενον S : ἐχόμενον P^B ‖ [3] τὸ ... (ἐπ)εχόμενον P^BS : om P^Q ‖ ἐπεχόμενον S : ἐχόμενον P^B ‖ [3 – 4] ὥσπερ ἐπὶ τῆς τοῦ οἴνου πιθάκνης P^{BQ} : om. S
§2 lemma non habet P, qui erravit nomen Epicuri ad §1 addendo ‖ [1] πᾶσιν del. Usener probant Diels Wachsmuth

1, 20. On space

§1 Zeno and his followers (say) that void, place (and) space differ; thus void is vacancy of body, place what is occupied by a body, space what is partially occupied, as in the case of a jar of wine.

§2 Epicurus (says) that all these terms are to be used interchangeably: void, place, space.

Liber Secundus Caput 9*

θ′. Περὶ τοῦ ἐκτὸς τοῦ κόσμου, εἰ ἔστι κενόν

1 οἱ μὲν ἀπὸ Πυθαγόρου ἐκτὸς εἶναι τοῦ κόσμου κενόν, εἰς ὃ ἀναπνεῖ ὁ κόσμος καὶ ἐξ οὗ.

2 οἱ δὲ Στωικοὶ εἶναι κενόν, εἰς ὃ κατὰ τὴν ἐκπύρωσιν ἀναλύεται, τὸ ἄπειρον.

3 Ποσειδώνιος οὐκ ἄπειρον, ἀλλ᾽ ὅσον αὔταρκες εἰς τὴν διάλυσιν [ἐν τῷ πρώτῳ Περὶ κενοῦ].

4 Πλάτων Ἀριστοτέλης μήτ᾽ ἐκτὸς τοῦ κόσμου μήτ᾽ ἐντὸς μηδὲν εἶναι κενόν.

2, 9*. On what is outside the cosmos, whether a void exists

1 Pythagoras and his followers (declare that) a void outside the cosmos exists, into which and from which the cosmos breathes.

2 The Stoics (declare that) a void exists, into which the cosmos dissolves in the conflagration, (and which is) infinite.

3 Posidonius (declares that it is) not infinite, but to the extent (that is) sufficient for the (cosmos') dissolution.

4 Plato and Aristotle (declare that) there is no void either outside the cosmos or inside it.

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