

Greek Medical Literature and its Readers

From Hippocrates to Islam and
Byzantium

**Edited by
Petros Bouras-Vallianatos and
Sophia Xenophontos**

First published 2017

ISBN: 978-1-4724-8791-9 (hbk)
ISBN: 978-1-351-20527-6 (ebk)

6 The user-friendly Galen

Ḥunayn ibn Ishāq and the
adaptation of Greek medicine for
a new audience

Uwe Vagelpohl

(CC BY-NC-ND 3.0)



Routledge
Taylor & Francis Group
LONDON AND NEW YORK

First published 2018
by Routledge
2 Park Square, Milton Park, Abingdon, Oxon OX14 4RN

and by Routledge
711 Third Avenue, New York, NY 10017

Routledge is an imprint of the Taylor & Francis Group, an informa business

© 2018 selection and editorial matter, Petros Bouras-Vallianatos and
Sophia Xenophontos; individual chapters, the contributors

The right of Petros Bouras-Vallianatos and Sophia Xenophontos to be
identified as the authors of the editorial material, and of the authors for
their individual chapters, has been asserted in accordance with sections 77
and 78 of the Copyright, Designs and Patents Act 1988.

With the exception of Chapters 3, 6 and 9, no part of this book may be
reprinted or reproduced or utilised in any form or by any electronic,
mechanical, or other means, now known or hereafter invented, including
photocopying and recording, or in any information storage or retrieval
system, without permission in writing from the publishers.

Chapters 3, 6 and 9 of this book are available for free in PDF format as
Open Access at www.tandfebooks.com. They have been made available under
a Creative Commons Attribution-Non Commercial-No Derivatives 4.0
license.

Trademark notice: Product or corporate names may be trademarks or
registered trademarks, and are used only for identification and explanation
without intent to infringe.

British Library Cataloguing-in-Publication Data

A catalogue record for this book is available from the British Library

Library of Congress Cataloging-in-Publication Data

Names: Bouras-Vallianatos, Petros, editor.

Title: Greek medical literature and its readers : from Hippocrates to
Islam and Byzantium / edited by Petros Bouras-Vallianatos and Sophia
Xenophontos.

Description: Milton Park, Abingdon ; New York, NY : Routledge, 2018. |

Includes bibliographical references and index.

Identifiers: LCCN 2017040874 | ISBN 9781472487919 (hbk : alk. paper) |
ISBN 9781351205276 (ebk)

Subjects: LCSH: Medicine, Greek and Roman—History—Sources. |
Medical literature—Greece.

Classification: LCC R138 .G73 2018 | DDC 610.938—dc23

LC record available at <https://lcn.loc.gov/2017040874>

ISBN: 978-1-4724-8791-9 (hbk)

ISBN: 978-1-351-20527-6 (ebk)

Typeset in Times New Roman
by Apex CoVantage, LLC

THE CENTRE FOR HELLENIC STUDIES, KINGS COLLEGE
LONDON, PUBLICATION 20

6 The user-friendly Galen

Ḥunayn ibn Ishāq and the adaptation of Greek medicine for a new audience

Uwe Vagelpohl

When a text is translated into another language and leaves its previous linguistic, cultural and social context, it also leaves its old audience behind. The new audience the text now faces has its own set of requirements, which may only partly overlap with those of the original audience. The task of bridging the gap between old and new audiences and appealing to the latter falls to the translator.

In the field of medieval Arabic medicine, an abundance of extant medical translations allows us to document how translators attempted to appeal to their audience and how they took the immediate practical needs of their readers into account. This chapter presents samples from this material and illustrates the insights it can provide into the relationship between the translator and his audience.

The key witness for the following observations is Ḥunayn ibn Ishāq (d. 873), a Christian physician born in the town of al-Ḥīrah in southern Iraq. As we will see, a central element of his understanding of the translator's task, which he illustrated most strikingly in his *Epistle (Risālah)*,¹ is his insistence on efficiently communicating the ideas of his Greek sources rather than reproducing their every textual detail. Three characteristic procedures he regularly resorted to may serve to illustrate how he implemented his approach: (1) by amplifying the source text in a variety of ways in the process of translation,² (2) by annotating his translations and (3) by repackaging the medical content of translated texts in a wide range of epitomes. Common to these procedures is Ḥunayn's responsiveness to the needs of his audience and his willingness to adapt Greek medical writings to ensure their maximum usefulness to his readers, many of whom were fellow physicians.

Background: The Graeco-Arabic translation movement

The medical translations into Syriac and Arabic, which form the backdrop of the following discussion, were part of the so-called Graeco-Arabic translation movement. Starting in the mid-eighth century, the following roughly two centuries saw a concerted effort funded by caliphs, court officials, scholars and interested (and rich) laypeople to translate a wide range of Greek philosophical, scientific and medical texts into Arabic, sometimes directly and sometimes through a Syriac intermediary.³

The bulk of Arabic medical translations was undertaken in ninth-century Baghdad. They are chiefly associated with Ḥunayn ibn Iṣḥāq and the other members of his translation “workshop”.⁴ This workshop included family members such as his son Iṣḥāq ibn Ḥunayn (d. 910) and his nephew Ḥubaysh ibn al-Ḥasan (fl. second half of the ninth century) but also other Christian translators who specialised not just in medical translations but also worked on philosophical and scientific texts.⁵

During the most active phase of Ḥunayn’s workshop around the mid-ninth century, translations were in great demand, and patrons paid well for them. Ḥunayn and other medical translators served an audience that consisted mainly of physicians, whose market value was in part determined by their familiarity with ancient Greek medicine, particularly the works of Hippocrates and Galen.⁶

Key to understanding the nature and impact of Ḥunayn’s activities is the fact that he was not only an accomplished translator with a command of ancient Greek that was unrivalled among his fellow translators. He was also a practising physician who served at the caliphal court in Baghdad. Not only did his linguistic and medical expertise ensure that his translations were of the highest quality; his double role as translator-physician also meant that he had a vested interest in seeing the medical knowledge conveyed by these texts put to good use. One fundamental requirement for his task was that Ḥunayn’s readers understood exactly what Galen and Hippocrates meant to say and how to interpret and apply their prognostic and therapeutic advice. A bad translation could potentially endanger the health of the patient and with it the reputation and livelihood of the physician who relied on it.

Ḥunayn’s translation ethos

The most explicit evidence we have for Ḥunayn’s approach and the responsibility he felt for his audience were his own observations on individual translations. He recorded them in the *Epistle*,⁷ a letter he wrote to a courtier who was one of his sponsors, ‘Alī ibn Yahyā ibn al-Munajjim (d. 888–9).⁸ According to a note at the end of the text, Ḥunayn wrote the first version of the *Epistle* at the age of 48 in the year 855–6 and updated it eight years later;⁹ additional information was added shortly after Ḥunayn’s death, possibly by the *Epistle*’s addressee, Ibn al-Munajjim.¹⁰

In the *Epistle* Ḥunayn surveyed the Syriac and Arabic translations of Galen he knew of or had produced himself. He set the scene at the beginning by listing a set of questions his correspondent had posed about these translations, which included the following:¹¹

... ومن الذين ترجمت أنا لهم كلّ واحد من تلك الكتب التي تولّيت ترجمتها
وفي أيّ حد من سبّي ترجمته لأنّ هذين أمرين قد يحتاج إلى معرفتهما إذ كانت الترجمة إنّما
تكون بحسب قوّة المترجم للكتاب والذي ترجم له

... who the patrons are for whom I translated each of the books I was charged with translating and the age I translated it because these two are things one needs to know since a translation depends on the competence of the book’s translator and the person it was made for.

With this observation, Hunayn established the importance of the audience for the character and quality of a translation, an idea he returned to several times in the *Epistle*. For a number of the works he surveyed, we learn the name of the person who commissioned the translation and sometimes also how Hunayn accommodated their specific requirements. On several occasions he remarked on the intelligence and experience of his sponsor, which required a corresponding degree of care on Hunayn's part. His note on Galen's *The Art of Medicine* includes the following information:¹²

وترجمته أنا بعد لداود المتطبِّب وكان داود المتطبِّب هذا رجلاً حسن الفهم
حريصاً على التعلُّم وكنيت في الوقت الذي ترجمته شاباً من أبناء ثلاثين سنة
أو نحوها وكانت قد التأمّت لي علّة صالحة من العلم في نفسي وفيما ملكته
من الكتب

I later translated it for David the Physician.¹³ This David the Physician was an intelligent and studious man. At the time I translated it, I was a young man of about 30 years but was already well equipped in terms of my own knowledge and the books I owned.

About Galen's *On the Pulse for Beginners* we learn:¹⁴

ثمّ ترجمتها أنا لسلمويه من بعد ترجمتي لكتاب الصناعة وبحسب ما كان
عليه سلمويه من الفهم الطبيعيّ ومن الدربة في قراءة الكتب والعناية بها
كان فضل حرصي على استقصاء تخلص جميع ما ترجمته له

I then translated it for Salmawayh¹⁵ after my translation of *The Art [of Medicine]*. Befitting Salmawayh's natural understanding and his experience and diligence in reading [medical] books, it was my greatest desire to be precise in everything I translated for him.

In the entry on Galen's *Therapeutic Method*, Hunayn noted:¹⁶

وقد ترجمت أنا هذا الكتاب كلّهُ إلى السريانيّة منذ سنين ليوحنا بن ماسويه
وبالغت في العناية بتلخيصه وحسن العبارة

I translated the entire book a few years ago into Syriac for Yūḥannā ibn Māsawayh¹⁷ and took particular care to make it accurate and stylistically pleasing.

This example also touches on the stylistic expectations of certain sponsors, which figure in other entries as well, for example that on Galen's *On Plethora*:¹⁸

وقد ترجمته منذ قريب لبختيشوع على نحو ما من عادتي أن أستعمله في
الترجمة من الكلام وهو أبلغ الكلام عندي وأفحله وأقربه من اليونانيّة من غير
تعذّر لحقوق السريانيّة ثمّ سألني بختيشوع أن أغيّر ترجمته بكلام أسهل
وأملس وأوسع من الكلام الأوّل ففعلت

I translated it a little while ago for Bukhtīshū¹⁹ in my usual translation style, that is, the style I regard as most emphatic, serious and closest to the Greek without doing violence to the rules of Syriac. He then asked me to revise the translation in a style that is simpler, smoother and looser than the former and I did so.

Ḥunayn's *Epistle* also illustrates how the different expectations by his sponsors were bound up with their respective cultural and linguistic backgrounds. The most obvious difference between the translation assignments Ḥunayn fulfilled was the language of translation, whether into Syriac or Arabic. Many of Ḥunayn's clients were physicians whose native tongue was Syriac. The practice of medicine was at his time in fact firmly dominated by Syriac-speaking Christians; a contemporary of Ḥunayn, the celebrated littérateur al-Jāḥiẓ (d. 869), reported an anecdote about a Muslim Arab physician who bitterly complained that, in spite of the high demand for physicians, his business was slow because people believed that a Muslim could not be a good doctor.²⁰ Whether the story is fictitious or not, its effect clearly relies on a widely shared perception that medicine was a mostly Christian domain.

In contrast to the physicians who commissioned translations into Syriac, the sponsors of the Arabic translations that are mentioned in the *Epistle* are mostly laymen or scholars who did not necessarily practise medicine but were generally interested in the field. The translations they requested not only had to reproduce the meaning of the original text but do so in a stylistically pleasing manner. Arabic translations also seem to have required a higher degree of explicitness: as we will see below, depending on the style and content of the original, the translator often spelled out details and implications that were left implicit in the Greek original.

The importance accorded to the accessibility of translations also emerges from the aforementioned autobiographical sketch quoted in Ibn Abī Uṣaybi'ah's *Best Accounts of the Classes of Physicians*. Though in all likelihood not written by Ḥunayn himself but perhaps by one of his associates shortly after his death,²¹ it reflects an attitude that was probably shared by his fellow translators. The fictional Ḥunayn boasted that he translated²²

في نهاية ما يكون من حسن العبارة والفصاحة ولا نقص فيها ولا زلل ولا ميل
لأحد من الملل ولا استغلاق ولا لحن باعتبار أصحاب البلاغة من العرب الذين
يقومون بمعرفة وجوه النحو والغريب ولا يعثرون على سيئة ولا شكلة ولا
معنى لكنّ بأعذب ما يكون عن اللفظ وأقربه إلى الفهم يسمعه من ليس
صناعته الطبّ ولا يعرف شيئاً من طرقات الفلسفة

with the most appropriate expression and utmost eloquence, without any defect or error, without any preference for any [particular] religious community, without any ambiguity or grammatical mistake according to the experts in Arabic style, who have comprehensive knowledge of all aspects of grammar and uncommon expressions. They do not discover any mishap or any [wrong] vowel mark or any concept that was not [expressed] in the most pleasant and comprehensible style, [a style] understood by people who are neither physicians nor in any way familiar with philosophical methods.²³

These and other statements reflect an attitude to translation that was characterised by an intense focus on the requirements of the translations' sponsors. We are unfortunately not in a position to examine the Syriac translations Hunayn mentioned and determine the nature and extent of the stylistic adjustments he claimed to have made; with very few exceptions, Hunayn's translations into Syriac are lost. We can, however, analyse his Arabic translations and identify the techniques he applied to achieve the accessibility he and his sponsors valued so highly.

Adapting Greek medicine for a new audience

Bringing out the text's meaning: amplification

The most frequent, even ubiquitous technique Hunayn used to appeal to his audience and address its needs was to amplify the translated text, that is, to expand it in various ways to facilitate understanding the contents, supply necessary information or resolve potential ambiguities.

To illustrate the shift between the Greek text and the Arabic translation occasioned by these amplifications, it helps to look at a couple of examples. They are taken from the Greek original and Arabic translation of Galen's Commentary on Book 1 of the Hippocratic *Epidemics*.²⁴

(1) *** καὶ πιστώσομαι τὰ γένη τῶν νοσημάτων, ὧν διήλθον, Ἴπποκράτει δηρημένα εἶναι οὕτως, (2) αἰτίον γε τὸν ἀέρα (τῶν) ἐπιδημίων νοσημάτων ἀποφαινομένῳ· (3) κατὰ μὲν γὰρ τὸ Περὶ φύσεως ἀνθρώπου ταυτὶ γράφει· (4) “αἱ δὲ νοῦσοι γίνονται αἱ μὲν ἀπὸ διατημάτων, αἱ δὲ ἀπὸ τοῦ πνεύματος, ὃ ἐσαγόμενοι ζῶμεν. (5) τὴν δὲ διάγνωσιν ἐκατέρων ὧδε χρῆ ποιέεσθαι . . . (6) οὐκοῦν οὐ τὰ διατήματα αἰτία (ἂν) εἴη γε, ὁκόταν διατῶμενοι πάντα τρόπον οἱ ἄνθρωποι ἀλίσκωνται ὑπὸ τῆς αὐτέης νόσου. (7) ὁκόταν δὲ αἱ νοῦσοι γίνωνται παντοδαπαὶ κατὰ τὸν αὐτὸν χρόνον, δῆλον ὅτι τὰ διατήματα αἰτία ἐστὶν (ἕκαστα) ἐκάστοισιν”.

(1) . . . and I confirm that it was Hippocrates who distinguished the types of diseases I listed in this manner (2) and who showed that the air is the cause of epidemic diseases. (3) For in *The Nature of Man*, he writes: (4) “Some diseases arise from regimen, some from the air we live on by inhaling. (5) The diagnosis of each needs to be made as follows: . . . (6) regimen could not be the cause when people are struck by the same disease, whatever kind of regimen they follow. (7) But when all sorts of diseases occur at the same time, it is clear that the regimen is the cause of each one”.

Hunayn's Arabic translation renders this passage as follows:²⁵

. . . (1) وَأَصَحَّحَ أَنَّ أَبْقِرَاطَ هُوَ الَّذِي قَسَمَ أَجْنَاسَ الْأَمْرَاضِ الْقِسْمَةَ الَّتِي وَضَعْتَهَا، (2) وَأَنَّ الْهَوَاءَ هُوَ السَّبَبُ فِي الْمَرَضِ الْوَاحِدِ الَّذِي يَحْدُثُ لِحِمَاةٍ كَثِيرَةٍ فِي بَلَدٍ وَاحِدٍ عَلَيَّ خِلَافَ مَا اعْتَادُوا. (3) وَهَذَا هُوَ قَوْلُ أَبْقِرَاطَ فِي ذَلِكَ بِلَفْظِهِ: (4) «فَأَمَّا الْأَمْرَاضُ فَمِنْهَا مَا يَكُونُ مِنَ التَّدْبِيرِ وَمِنْهَا مَا يَكُونُ مِنَ الْهَوَاءِ

الذي باستدخاله نعيش. (5) وينبغي أن نتعرف كل واحد من هذين الجنسين من الأمراض بما أصف. . . (6) فليس إذاً التدبير هو السبب في المرض إذ كان تدبير الناس مختلفاً متصراً على جميع أنحاءه، ثم كان المرض الذي يحدث واحداً بعينه». (7) فأما متى كانت الأمراض التي تحدث في وقت واحد مختلفة فبين أن التدبير الذي يستعمله كل واحد من الناس الذين يمرضون هو السبب في مرضه

(1) I want to clarify²⁶ and confirm with it that it was Hippocrates who divided the types of diseases in the manner I set out (2) and that the climate is the cause when the same disease affects a large group in the same area contrary to what they are accustomed to. (3) This is what Hippocrates said about this in his own words:

(4) “Some diseases are caused by regimen and some by the air we live on by inhaling it. (5) We need to distinguish between each of these two kinds of diseases in the manner I describe: . . . (6) Hence, it is not regimen that causes the disease because people’s regimens are diverse and free in every respect while the disease that occurs is one and the same. (7) But when diseases that occur at the same time are varied, it is clear that the regimen followed by each person who falls ill is the cause of their disease”.²⁷

Some of the amplifications in this sample bring out information implied by the Greek text; “the disease” (*al-maraḍi*) in section (6) or “of their disease” (*fī maraḍihī*) in section (7), for example, clarify that the “causes” (αἴτια) mentioned in the Greek text were indeed those of the diseases under discussion rather than anything else. The same applies to “who falls ill” (*alladhīna yamraḍūna*) in section (7), an amplification of “each [disease]” (ἐκάστοισιν).

Others add for reasons of style and emphasis information that is also implicit in the Greek: supplying the phrase “in his own words” (*bi-lafẓihī*) in section (3), for instance, emphasises the fact that Galen quoted his Hippocratic source verbatim, while the expression “in the manner I describe” (*bi-mā aṣīfu*) in section (5), an amplification of “as follows” (ὡςδε), may have served to smoothe the transition between the introductory clause in the quotation from *The Nature of Man* and the actual explanation.

Other examples straddle the line between paraphrase and gloss: the phrase “because people’s regimens are diverse and free in every respect” (*idh kāna tadbīru l-nāsi mukhtalifan mutaṣarrifan ‘alā kullī anḥā’ihī*) in section (6) elaborates on the Greek “whatever kind of regimen they follow” (διαίτῳμενοι πάντα τρόπον), including a synonymic doublet (“diverse and free”, *mukhtalifan mutaṣarrifan*) for added emphasis. The somewhat more extended paraphrase “while the disease that occurs is one and the same” (*thumma kāna l-maraḍu lladhī yahduthu wāḥidan bi-‘aynihī*), also in section (6), expands the brief Greek “by the same disease” (ὑπὸ τῆς αὐτέης νοῦσου) into a full clause.

Finally, the translation replaces “of epidemic diseases” (τῶν ἐπιδημίων νοσημάτων) in section (2) with “the same disease . . . contrary to what they are accustomed to” (*al-maraḍi al-wāḥidi. . . ‘alā khilāfī mā ‘iādū*), an elaborate gloss

that harks back to the definition of epidemic diseases Galen gave at the beginning of the Commentary on Book 1 of the *Epidemics*,²⁸ spelled out a little further on²⁹ and then repeated several times with only slight variation. The translator's aim may have been to make very clear that the text refers on each occasion to epidemic diseases and perhaps also, by the sheer frequency of repetition, drill the definition of epidemic diseases into the minds of his readers.

While these examples are all drawn from a single translation, the phenomenon they illustrate can be observed in a large number of texts associated with the translation workshop of Ḥunayn ibn Ishāq. The general tendency of at least some Arabic translations of the time to expand their Greek sources is in fact well known by now and hardly bears repeating. It is on the other hand well worth examining the variety of discrete phenomena that I have collectively labelled "amplification". Let me briefly introduce some characteristic types of amplification in the translation of the *Epidemics* commentary.³⁰

We encountered two types of amplification in the sample. The first is the use of hendiadys or synonymic doublets, the translation of a single Greek term with two or more Arabic terms.³¹ Synonymic doublets are very frequent and conspicuous in medical translations; we find hundreds of examples in the *Epidemics* commentary alone and many more in other medical translations.³² These doublets can serve different purposes: they may translate a term for which one Arabic term would not be sufficient or precise enough, or they may sometimes indicate that the translator was not entirely sure about the meaning of a Greek term. Most often, though, they translate unproblematic non-technical terms, that is, they are used as stylistic devices: doublets were apparently part of the house style of Ḥunayn ibn Ishāq and his circle.³³

The second type of amplification in our introductory sample is the substitution of pronominal references with their referents, for example when translating the phrase "he explained" (δέδεικται δ' ὑπ' αὐτοῦ, 23.1 Gr.) as "Hippocrates explained" (*wa-qad bayyana Abuqrāṭu*, 116.7 Ar.) or "he taught" (αὐτὸς ἐδίδαξεν, 143.13 Gr.) as "Hippocrates taught us" (*fa-qad 'allamanā Abuqrāṭu*, 472.9 Ar.). The purpose seems to be to resolve potential ambiguities that could arise from the use of pronouns. This is especially important when translating between languages such as Greek, Syriac and Arabic with their different systems of grammatical gender.

Closely related to pronominal amplification is a third type of amplification, the addition of implicit subjects. In his comments, Galen often noted that Hippocrates "said this" or "explained that", but since it was clear that he was consistently referring to the views of Hippocrates, the subject did not need to be spelled out. The translator on the other hand often felt obliged to add the implicit subject "Hippocrates" in such situations, for example when he expanded "he described" (ἔγραψεν, 18.18 Gr.) to "Hippocrates described" (*wa-qad waṣafa Abuqrāṭu*, 102.11 Ar.) or when he rendered "he said" (φησὶν, 81.29 Gr.) as "Hippocrates said" (*qāla Abuqrāṭu*, 286.3 Ar.).

A fourth type of amplification is "definition": the translation sometimes defines a Greek term instead of translating it. A characteristic example has already been mentioned, the expansion of the phrase "epidemic diseases" (τῶν ἐπιδημίων νοσημάτων, 7.15 Gr.) to "the same disease that affects a large group at the same

time and in the same area contrary to what the inhabitants of that area are accustomed to” (*al-marāḍi l-wāḥidi lladhī yaḥduthu li-jamā‘atin kathīratin fī waqtin wāḥidin wa-fī baladin wāḥidin ‘alā khilāfi mā ‘tāda ahlu dhālika l-baladi*, 76.21–78.1 Ar.). Somewhat later, the translator substitutes the term “mesentery” (τὸ μεσεντέριον, 68.13–14 Gr.) with the definition “the regions between the bowels and the membrane that covers them” (*al-mawāḍi ‘i llatī bayna l-am ‘ā ‘i wa-bayna l-jushā ‘i l-mamdūdi ‘alayhā*, 242.2–3 Ar.)

This fourth type of amplification is closely related to the final type, “explanation” or “gloss”, which covers the addition by the translator of explanatory expressions or entire clauses which do not appear in the Greek text. For example, the translator expanded the phrase “the future diseases” (τὰ γενησόμενα νοσήματα, 21.15 Gr.) to “the diseases that will occur are unusual general diseases or similar ones that are, unlike this kind, benign and harmless” (*al-amrāda sa-tahduthu mina l-amrādi l-‘ammīyati l-gharībati wa-mithlihā mina l-amrādi llatī hiya min ghayri hādihā l-jinsi mim mā ‘āfiyatun salīmatun*, 110.15–16 Ar.). On another occasion, he glossed the term “hemiplegia” (παρὰπληγία, 81.1 Gr.) as “the paralysis that affects some body parts” (*al-istirkhā ‘i lladhī ya ‘riḍu fī ba ‘ḍi l-‘dā ‘i*, 282.10 Ar.).

This list is not comprehensive but gives an idea of the various forms amplification can take. What these forms all have in common is that the information they supply is already implicit in the Greek text, that is, amplification makes implicit meaning explicit. In Translation Studies, these types of amplification have been called “explicitation” and described as an expansion of a translated text that raises its level of explicitness.³⁴ Comparative analyses of translations between mostly modern languages, but also between medieval languages, have shown that the phenomenon of explicitation is so prominent and consistent that some scholars have termed it a “universal of translation”, a characteristic that largely applies to translation between any language pair.³⁵

Translation Studies has identified a number of factors that drive explicitation. Two of them seem to be particularly relevant for Greek-Arabic translations: the first is the process of translation itself, for example a translator’s unconscious effort to communicate the meaning of a source text as fully as possible; the second, equally important factor is the often diverging textual and stylistic requirements of the languages involved.³⁶ Given the substantial linguistic differences between Greek and Arabic and also the historical and cultural separation involved, there are good reasons to amplify the translated text: a more literal approach that would have dispensed with amplification would have resulted in a barely readable text that would have communicated only a fraction of the medical content. In this regard, the use of explicitation is not a matter of personal taste but a necessity if the aim of the translator is to communicate the contents of his source as precisely and comprehensively as possible.

Also important are the conscious choices the translator made to accommodate his audience. It has often been stated that the translations produced by Ḥunayn ibn Ishāq and his circle were reader-oriented rather than text-oriented, that they prioritised the needs of their audience over the faithful reproduction of every detail of the Greek source.³⁷ Looking at the sheer number and often trivial nature of

amplifications in the *Epidemics* commentary, it seems that Ḥunayn did not merely fill in the gaps in understanding that normally arise in translation; he clearly went out of his way to make sure that every last ambiguity was resolved and every last open question addressed.

Adding supplemental information: translation notes

The second important procedure Ḥunayn used to transmit additional explanations and reflections about the process of translation were annotations that were passed on alongside a fair number of the Arabic translations that emerged from his workshop.³⁸ At a time when the respect for the translated source dictated that the presence of the translator be reduced to a minimum, often not more than a mention in the colophon and sometimes not even that, this was unusual.³⁹

The form these notes take is also unusual: since he was bound by the structure and contents of his source, Ḥunayn had, as it were, to step outside the text whenever he needed to resolve a problem that required more than a short gloss or a more elaborate turn of phrase. The notes are therefore inserted into the text body of the translation but introduced by “Ḥunayn said” (*qāla Ḥunayn*) to distinguish them clearly from the surrounding text.⁴⁰

The extant notes vary in length from a line or two to several manuscript pages. Ḥunayn, who spoke in the first person, presented a wide range of observations, some to do with difficult terms, additional explanations of concepts discussed in the translation, or the process of translation itself, more specifically the problems he encountered and how he dealt with them. The latter kind of notes are especially valuable because they offer a unique window into the practice of translation between Greek, Syriac and Arabic in the ninth century.

Straightforward explanatory notes make up the majority of Ḥunayn’s comments. They either seek to clarify terms, sometimes by referring to the underlying Greek word, or they expand the text in order to spell out points that are only briefly alluded to or remain ambiguous in the original text.

To cite just one example, in his translation of Galen’s *On the Capacities of Simple Drugs* Ḥunayn inserted a gloss on a technical term in which he mentioned a problem in the Greek textual tradition caused by a simple scribal error:⁴¹

قال حنين: وجدنا في كثير من النسخ اليونانية بزر الفنجكشت وورقه يقطع الباء كما سيبين ذلك جالينوس في المقالة التي تتلو هذه وإذا كان الأمر على هذا فالناسخ إذا غلط في أول نسخة فكتب مكان لينوا وهو الكتان ليغوا وهو الفنجكشت باليونانية

Ḥunayn said: In many Greek manuscripts we have found “chasteberry seed”, but as Galen is going to explain in the following book [sc. of Galen’s *On the Capacities of Simple Drugs*], its leaves prevent sexual intercourse. This being the case, the copyist therefore made a mistake at the beginning of a copy and wrote instead of *līnū* (λίνοῦ), which means flax, *līghū* (λύγος), which in Greek means chasteberry.⁴²

A second category of Ḥunayn's comments deals with the process of translation. Most frequent are notes that indicate gaps Ḥunayn found in his source manuscripts and his attempts to fill them. Conversely, he occasionally signalled material he omitted or thought about omitting and laid out his reasons for doing so.

For example, in his translation of Galen's Commentary on Book 2 of the Hippocratic *Epidemics* Ḥunayn explained that he was unable to reproduce the ambiguity of a Greek phrase in Arabic and had meant to omit it but reconsidered because he thought that it could still be useful for some readers:⁴³

قال حنين: إن هذا الكلام في اللسان اليوناني محتمل لأن يقطع ويقرأ على أنحاء شتى من التقطيع والقراءة فيدل بحسب كل واحد من أنواع تقطيعه وقراءته على واحد واحد من هذه المعاني التي أشار إليها جالينوس. وليس ذلك في العربية بممكن ولذلك قد كنت هممت بإسقاط هذا الكلام إذ كان لا يطابق اللغة العربية ويفهم فيها على حقوقها إلا أنني لما وجدت معاني قد مرّت في هذا الكلام نافعة لمن تدبّرها رأيت ترجمته على حال إذ كانت ليس تضرّ ترجمته وهي إلى المنفعة أقرب. ومن قرأه فقدّر أن يصل إلى الانتفاع به فهو منه على ربح ومن لم يقدر على ذلك فهو قادر أن يتاركة فلا يضرّه مكانه شيئاً إن شاء الله

Ḥunayn said: In Greek this passage can be split up and read [i.e. parsed] in various ways. It signifies each separate meaning Galen pointed out depending on the particular ways it is split up and read. This is not possible in Arabic. Since this passage does not suit the Arabic language and could not be understood completely in it, I had considered dropping it but decided to translate it anyway when I found ideas in this passage that benefit the people who study them since translating it does not hurt but may rather be beneficial. Those who read it can draw [some] benefit and therefore profit from it; those who cannot can ignore it without suffering any harm, God willing.

Among the translation notes are also a few longer excurses that were inspired by more substantial philological and translation problems. Two interesting examples can be found in the translation of Galen's Commentary on Book 2 of the Hippocratic *Epidemics*. In one such excursus, Ḥunayn explained why the fifth part of this commentary is missing,⁴⁴ in another he discussed an apparent contradiction between the text he was translating and another Galenic work: after laying out the contradiction in detail, Ḥunayn suggested that his poor manuscripts may be to blame. Interestingly, he also felt obliged to point out that it was certainly not his intention to contradict Galen.⁴⁵

While unwaveringly respectful of Galen, Ḥunayn also sometimes used his notes to criticise texts by other authors who did not come up to the standards set by Galen. This is for example the case for the pseudo-Aristotelian *Physiognomics*. Out of fifteen extant notes that accompany Ḥunayn's translation of this text, six criticise or even reject the reasoning of the author. Two of these notes adduce evidence from Galenic writings⁴⁶ and two others refer to Ḥunayn's personal experience to contradict some physiognomic claims made in the text.⁴⁷ Ḥunayn's critical attitude may have been the result of his doubts about the authorship of this work.⁴⁸

From translation to medical teaching: didactic writings

The final technique Hunayn resorted to in order to adapt Greek medical texts for their new audience consisted in filtering out the medical knowledge contained in the translations and repurposing it in a wide variety of didactic writings. Since his ultimate goal was to fulfil the immediate practical needs of his most important audience, fellow physicians and students of medicine, it should not come as a surprise that the production of a Syriac and Arabic translation was for some Greek medical texts just a first step in an entire chain of exploitation.

Galen's commentaries on Hippocratic writings for example were, from a practical point of view, much less attractive for Hunayn's audience than his therapeutic and prognostic writings. They tended to be long and unwieldy, and they often included a large amount of material that was irrelevant for medical practice. To make their medical content available in a more easily digestible form, Hunayn wrote epitomes based on some of these commentaries in which he stripped out any extraneous material and repackaged the relevant information in different formats that answered the needs of his audience.

Hunayn's writings on Galen's *Epidemics* commentaries illustrate this process very well. In the list of Hunayn's writings reported by Ibn Abī Uṣaybi'ah,⁴⁹ we find four titles of compilations that are clearly based on his Arabic translation of the *Epidemics* commentaries: first, the *Summaries of the Contents of the First, Second and Third Books of Hippocrates' Epidemics in the Form of Questions and Answers* (*Jawāmi' ma'ānī l-maqālah al-ūlā wa-l-thānīyah wa-l-thālithah min kitāb Ibīdhīmīyā li-Abuqrāṭ 'alā ṭarīq al-mas'alah wa-l-jawāb*);⁵⁰ second, the *Fruits of the Nineteen Extant Parts of Galen's Commentary on Hippocrates' Epidemics in the Form of Questions and Answers* (*Thimār al-tis 'ashara maqālah al-mawjūdah min tafṣīr Jālīnūs li-kitāb Ibīdhīmīyā li-Abuqrāṭ 'alā ṭarīq al-mas'alah wa-l-jawāb*);⁵¹ third, the *Questions on Urine Extracted from Hippocrates' Epidemics* (*Mas'ūl fi l-bawl intaza'ahā min kitāb Ibīdhīmīyā li-Abuqrāṭ*);⁵² and fourth, a collection of *Aphorisms Drawn from the Epidemics* (*Fuṣūl istakhrajahā min kitāb Ibīdhīmīyā*).⁵³

Parts of the first compilation, the *Summaries*, survive under a slightly different title; the extant parts cover Galen's Commentary on Book 2 and the final parts of his Commentary on Book 6 of the *Epidemics*.⁵⁴ A compilation with a name that resembles the second title, *Fruit of Hippocrates' Book on Visiting Diseases* (*Thamarat kitāb Buqrāṭ fi l-amrād al-wāfidah*) is preserved in a single manuscript⁵⁵ and ascribed to Hunayn ibn Iṣḥāq, but the medical terminology in this text differs in some important respects from that of the commentary itself and the *Summaries*. It may be the work of the physician Ibn al-Ṭayyib (d. 1043), who produced several epitomes based on Galenic works that are entitled *Fruit* or *Fruits* (*Thamarah* or *Thamarāt/Thimār*). The third compilation, the *Questions on Urine*, is lost; we only have a handful of quotations in later medical writings.⁵⁶ The fourth text, the *Aphorisms Drawn from the Epidemics*, may be extant in a single, now probably lost Baghdad manuscript.⁵⁷ While the text is ascribed to Hunayn, the terminology is again substantially different from that of the commentary and the *Summaries*. In addition, it does not contain a passage preserved

in al-Rāzī's (d. ca. 932) *Comprehensive Book (Kitāb al-Ḥāwī)* that is explicitly quoted from Ḥunayn's *Aphorisms Drawn from the Epidemics*.⁵⁸

Medical material drawn from the Arabic translation of Galen's *Epidemics* commentaries was also incorporated in a wide range of general medical writings that came in similar, also clearly didactic formats. Among them are for example works that organise medical knowledge in the form of tree-like diagrammatic tables which illustrate the relationships between the different branches of the science of medicine, the so-called *tashjīr* genre. Together with the polymath Ibn Bihrīz (fl. ca. 800) and the physician Ibn Māsawayh (d. 857), Ḥunayn was one of the first Arabic scholars who used this particular format.⁵⁹

Conclusions

The techniques of adaptation outlined above illustrate the great lengths used by one translator, albeit a particularly talented and influential one, to appeal to his medical audience and fulfil its needs. As we know from his *Epistle*, Ḥunayn accommodated the needs of individual sponsors who asked him to produce these translations. He varied the style of translations to satisfy patrons who did not like the contemporary style of medical translations, which was often informed by the stylistic features of their Greek and Syriac sources. On the other hand, patrons who were experienced with this translation style asked for and received renderings that were closer to the Greek original.

In addition to his pronouncements in the *Epistle*, which illustrate his concern for his audience, the evidence of Ḥunayn's translations allows us to distinguish three major levels of adaptation he applied to serve the needs of his readers:

Amplifications, which are typical for a broad range of texts translated by Ḥunayn ibn Ishāq, constitute the first level of adaptation. Rather than individual stylistic preferences, these amplifications reflect his general desire for accuracy in the transmission of medical knowledge. As the character and extent of amplification shows, the meticulous and efficient transmission of medical information took precedence over the faithful reproduction of every detail of the original text.

At the second level of adaptation, Ḥunayn stepped outside the translated text and supplemented it with additional information and explanations, which were clearly marked to distinguish them from the surrounding text.

At the final level of adaptation, Ḥunayn then uncoupled medical information and its linguistic substrate: medical knowledge contained in translations was extracted and re-formatted in accordance with the needs of different audiences, for example as manuals for practising physicians, textbooks addressed to medical students and aphoristic summaries that could serve as aides-mémoire for medical scholars at all levels or as introductory writings for a wider audience.

Once the translations that came out of Ḥunayn's workshop had established an authoritative canon of Arabic medical translations, the latter genre of adaptation became the dominant form of re-fashioning Greek medical knowledge for

the needs of changing audiences. In addition to the scores of epitomes based on Galen's works that were written by Hunayn himself, his contemporaries and later authors eagerly joined in his effort to disseminate medical knowledge. Among them were for example his close contemporary, the mathematician and physician Thābit ibn Qurra (d. 901), who wrote a series of epitomes of individual Galenic writings under the titles *Summaries* (*Jawāmi'*) or *Abridgement* (*Ikhtisār*). Somewhat later the above-mentioned Persian physician al-Rāzī penned short treatments of individual Galenic works interspersed with his own comments entitled *Outline* (*Talkhīṣ*), a title that was also used by the celebrated philosopher Ibn Rushd (d. 1198) both for his short philosophical commentaries and for equally brief writings based on several of Galen's medical works. In between these two, the physician Abū l-Faraj 'Abdallāh ibn al-Ṭayyib, mentioned before, condensed a wide range of Galen's writings into treatises entitled *Fruits* (*Thimār*). Finally, the Jewish philosopher and physician Moses Maimonides (d. 1204), a contemporary of Ibn Rushd, wrote a number of extracts under the title *Synopsis* (*Mukhtaṣar*).⁶⁰

These writings illustrate the continuing high demand for concise and accessible guides to Galen's medical thought. They also illustrate that ancient medical writings were read, analysed and summarised mainly as sources of practical knowledge. This attitude was characteristic not just for Hunayn ibn Ishāq's translation activities but for the Graeco-Arabic translation movement as a whole, which started out with translations of works that supplied much-needed applied knowledge and then branched out into works that provided theoretical knowledge for the developing scientific and philosophical tradition.⁶¹

Notes

- 1 Edited by Bergsträßer (1925) with additions and revisions in Bergsträßer (1931); cf. also Ullmann (2002–7: I.30–1) and Käs (2010), who edited and translated a recently discovered abbreviated version of the *Epistle*.
- 2 As we will see below, these amplifications fall under the heading of “explicitation” as defined in modern Translation Studies: “the technique of making explicit in the target text information that is implicit in the source text” (Baker 1998: 80–4, here: 80).
- 3 The best general accounts of the historical context, development and impact of the Graeco-Arabic translation movement are Endress (1987, 1992) and Gutas (1998).
- 4 On Hunayn ibn Ishāq and his translation methods, see Strohmaier (1991) and Brock (1991). The group Hunayn led has variously been called a “school”, which suggests a degree of cohesion and methodological standardisation that they and other such circles probably did not display; see Endress (1997: 48–9), who described them as “groups held together by various bonds of origin, loyalty, scientific orientation and, most important, by their patrons”. For the term “workshop”, see Vagelpohl (2010: 252).
- 5 Many medical translations are anonymous or were falsely ascribed to Hunayn; Bergsträßer (1913), who studied a small sample of such texts, attempted to distinguish the terminological and stylistic fingerprints of Hunayn and his nephew Hubaysh but ultimately did not get very far; see the criticisms voiced by Strohmaier (1970: 26–32), who was able to show that many stylistic and terminological features Bergsträßer associated with Hubaysh are also characteristic for other translators working with and for Hunayn, and Overwien (2012: 153–4).

- 6 Micheau (1997) portrays the sponsors Ḥunayn named most frequently in the *Epistle*.
- 7 As Ḥunayn noted in the introduction to the *Epistle*, he had to compile the information about extant Syriac and Arabic translations of Galen from memory since he had lost his library (Ḥunayn, *Epistle*, Introd., ed. Bergsträßer 1925: 1.9–16, 3.4–14 [Ar.]), apparently as a consequence of falling out of favour with the caliph. The most extensive account of this episode, a purported autobiographical text written by Ḥunayn and transmitted in Ibn Abī Uṣaybi‘ah’s (d. 1270) *Best Accounts of the Classes of Physicians* (*‘Uyūn al-anbā’ fī ṭabaqāt al-aṭibbā’*), is inauthentic (cf. the extensive discussion in Cooperson 1997: 239–43) but may at least contain a reliable outline of the course of events (Strohmaier 1965: 530).
- 8 Cf. Meyerhof (1926: 687) and Micheau (1997: 164–7).
- 9 Ḥunayn, *Epistle*, par. 129, ed. Bergsträßer (1925) 52.8–11, 13–15 (Ar.).
- 10 Cf. Meyerhof (1926: 687).
- 11 Ḥunayn, *Epistle*, Introd., ed. Bergsträßer (1925) 2.20–3 (Ar.).
- 12 Ḥunayn, *Epistle*, par. 4, ed. Bergsträßer (1925) 6.2–6 (Ar.).
- 13 Possibly Dāwūd ibn Sarābiyūn, a famous Nestorian Christian physician of the late eighth/early ninth century; cf. Meyerhof (1926: 719) and Micheau (1997: 159–61).
- 14 Ḥunayn, *Epistle*, par. 5, ed. Bergsträßer (1925) 6.14–17 (Ar.).
- 15 The Nestorian Christian court physician Salmawayh ibn Bunān (d. 840); cf. Meyerhof (1926: 718) and Micheau (1997: 150–2).
- 16 Ḥunayn, *Epistle*, par. 16, ed. Bergsträßer (1925) 15.4–5 (Ar.).
- 17 The Nestorian Christian court physician (and rival of Salmawayh) Yūḥannā ibn Māsawayh (d. 857), Ḥunayn’s former medical teacher; cf. Meyerhof (1926: 717) and Micheau (1997: 152–5).
- 18 Ḥunayn, *Epistle*, par. 56, ed. Bergsträßer (1925) 30.22–31.2 (Ar.).
- 19 The Nestorian Christian court physician Bukhtīshū’ ibn Jibrīl (d. 870); cf. Meyerhof (1926: 718) and Micheau (1997: 157–9).
- 20 Quoted in Pormann and Savage-Smith (2007: 80).
- 21 See Strohmaier (1965: 529–30).
- 22 Ibn Abī Uṣaybi‘ah, *Best Accounts of the Classes of Physicians*, ed. Müller (1884) I.191.22–6.
- 23 See also the French translation and discussion of this passage in Salama-Carr (1990: 57).
- 24 Galen, *In Hipp. Epid. I*, proem., ed. Kühn (1828) XVIIA.8.13–9.15 = ed. Wenkebach (1934) 7.22–8.13.
- 25 Galen, *In Hipp. Epid. I vers. arab.*, proem., ed. Vagelpohl (2014) 78.13–80.8.
- 26 The Greek equivalent of “I want to clarify” (*urīdu bihī an ubayyina*) falls into a lacuna in the Greek text.
- 27 Galen, *In Hipp. Epid. I vers. arab.*, proem., ed. Vagelpohl (2014) 79.14–81.9.
- 28 This and the next passage are only extant in the Arabic translation: Galen, *In Hipp. Epid. I vers. arab.*, proem., ed. Vagelpohl (2014) 68.8–9.
- 29 Galen, *In Hipp. Epid. I vers. arab.*, proem., ed. Vagelpohl (2014) 68.16–19.
- 30 In the following examples, the Greek text of Galen, *In Hipp. Epid. I*, edited by Wenkebach (1934), is referenced as “Gr.”, the Arabic translation, edited by Vagelpohl (2014), as “Ar”.
- 31 On doublets or hendiadys in translations of Galen, see among others Thillet (1997). Tuerlinckx (2008: 480–5) analysed the use of doublets in the Arabic translation of the homilies of Gregory of Nazianzus.
- 32 Cf. e.g. Bergsträßer (1913: 50–1); Biesterfeldt (1973: 18); Cooper (2011: 85); Al-Dubayan (2000: 66); Garofalo (1986: xxiii); Meyerhof and Schacht (1931: 7); and Strohmaier (1970: 30–1) with examples.
- 33 Cf. Pormann (2004: 257–8).

- 34 Cf. Baker (1998: 80), art. "Explication".
- 35 Cf. Baker (1998: 289), art. "Universals of Translation".
- 36 Cf. Baker (1998: 82–3), art. "Explication".
- 37 The distinction between "text-oriented" and "reader-oriented" was used by Brock (1983: 4–5) to describe the evolving methodology of Greek-Syriac translations, but it can equally well be applied to the Graeco-Arabic translation movement. See also Gutas (1998: 140–1).
- 38 E.g. in the translations of Galen's *On the Capacities of Simple Drugs, Anatomical Procedures, Containing Causes, Antecedent Causes, Parts of the Art of Medicine, Medical Names*, and his Commentaries on the Hippocratic Oath, *Regimen in Acute Diseases, Aphorisms and Epidemics*; cf. Vagelpohl (2011) on Hunayn's notes in the translation of Galen's Commentary on Books 1, 2, 3 and 6 of the Hippocratic *Epidemics* and the pseudo-Aristotelian *Physiognomics*.
- 39 Cf. Vagelpohl (2011: 263).
- 40 This may not be the original arrangement; it is also conceivable, though less likely, that the copyists of these translations took Hunayn's annotations from the margins of their source manuscripts and inserted them into the text body.
- 41 Ullmann (2002: 32–3).
- 42 In Greek minuscule, the letters ν and γ could be easily confused, and ι and υ were pronounced the same, so this was an understandable scribal error.
- 43 Galen, *In Hipp. Epid. II vers. arab.*, VI.1, ed. Vagelpohl (2016) II.910.13–912.3; cf. Vagelpohl (2011: 276–7, no. 8).
- 44 Galen, *In Hipp. Epid. II vers. arab.*, V.1, ed. Vagelpohl (2016) II.762.5–764.9; cf. Vagelpohl (2011: 272–4, no. 6).
- 45 Galen, *In Hipp. Epid. II vers. arab.*, VI.3, ed. Vagelpohl (2016) II.794.1–796.3; cf. Vagelpohl (2011: 274–6, no. 7).
- 46 Ps. Aristotle, *Physiognom. vers. arab.*, ed. Ghersetti (1999) 4.2–6, 14.18–17.16. The two notes cite Galen's *The Capacities of the Soul Depend on the Mixtures of the Body* and the second book of his *On Mixtures*.
- 47 Ps. Aristotle, *Physiognom. vers. arab.*, ed. Ghersetti (1999) 9.14–21, 17.16–18.
- 48 Cf. Vagelpohl (2011: 256–7) and Grignaschi (1974: 290–1).
- 49 Ibn Abī Uṣaybi'ah, *Best Accounts of the Classes of Physicians*, ed. Müller (1884) I.197.24–200.27.
- 50 Ibn Abī Uṣaybi'ah, *Best Accounts of the Classes of Physicians*, ed. Müller (1884) I.200.21–2.
- 51 Ibn Abī Uṣaybi'ah, *Best Accounts of the Classes of Physicians*, ed. Müller (1884) I.199.10–11.
- 52 Ibn Abī Uṣaybi'ah, *Best Accounts of the Classes of Physicians*, ed. Müller (1884) I.199.20–1.
- 53 Ibn Abī Uṣaybi'ah, *Best Accounts of the Classes of Physicians*, ed. Müller (1884) I.199.16.
- 54 On this text and the apparent contradiction between the title reported Ibn Abī Uṣaybi'ah and the actual contents of the extant work, cf. Hallum (2012: 188–9).
- 55 Ms. Bombay, Univ. Libr. 313, fol. 1v–29v.
- 56 Cf. Hallum (2012: 187).
- 57 Ms. Baghdad, al-Mathaf al-'Irāqī 649, fol. 181v–185v; cf. Sezgin (1970: 406).
- 58 Al-Rāzī, *Comprehensive Book*, ed. Hyderabad (1955–70) XIX.139.8.
- 59 Cf. Endress (2006: 112).
- 60 Many of these works are extant, but they have been relatively neglected. The names of the treatises listed here, which sometimes overlap or shade into commentaries, parallel those of philosophical writings. These have received more attention; cf. Gutas (1993) on the genres and titles of Arabic logical works.
- 61 Cf. Gutas (1998: 107–20).

Bibliography

Texts and translations used

- Bergsträßer, G. (ed.). 1925. *Ḥunain ibn Ishāq über die syrischen und arabischen Galen-Übersetzungen*. Leipzig: F. A. Brockhaus. [Abhandlungen für die Kunde des Morgenlandes 17/2]
- . 1932. *Neue Materialien zu Ḥunain ibn Ishāq's Galen-Bibliographie*. Leipzig: F. A. Brockhaus. [Abhandlungen für die Kunde des Morgenlandes 19/2]
- Biesterfeldt, H. (ed.). 1973. *Galens Traktat "Daß die Kräfte der Seele den Mischungen des Körpers folgen" in arabischer Übersetzung*. Wiesbaden: Franz Steiner. [Abhandlungen für die Kunde des Morgenlandes 40/4]
- Cooper, G. (ed.). 2011. *Galen, De diebus decretoriis, from Greek into Arabic. A Critical Edition, with Translation and Commentary, of Ḥunayn ibn Ishāq, Kitāb ayyām al-buḥrān*. Farnham: Ashgate. [Medicine in the Medieval Mediterranean 2]
- Al-Dubayan, A. (ed.). 2000. *Galen: "Über die Anatomie der Nerven". Originalschrift und alexandrinisches Kompendium in arabischer Überlieferung*. Berlin: Klaus Schwarz Verlag. [Islamkundliche Untersuchungen 228]
- Garofalo, I. (ed.). 1986. *Galenus: Anatomicarum Administrationum Libri qui supersunt novem. Earundem interpretatio arabica Hunaino Isaaci filio ascripta. Tomus prior: libros I–IV continens*. Naples: Instituto Universitario Orientale.
- Gherstetti, A. (ed.). 1999. *Il Kitāb Aristātālīs al-faylasūf fī l-firāsa nella traduzione di Ḥunayn b. Ishāq*. Rome: Herder Editrice. [Quaderni di Studi Arabi. Studi e testi 4]
- Kühn, C. G. (ed.). 1821–33. *Claudii Galeni Opera Omnia*. 20 vols in 22. Leipzig: Knobloch.
- Meyerhof, M. and J. Schacht. (eds.). 1931. *Galen über die medizinischen Namen*. Berlin: Verlag der Akademie der Wissenschaften. [Abhandlungen der preussischen Akademie der Wissenschaften. Philosophisch-historische Klasse 1931/3]
- Müller, A. (ed.). 1884. *Ibn Abi Useibia [‘Uyūn al-anbā’ fī ṭabaqāt al-aṭibbā’]*. 2 vols. Königsberg: self-published.
- Al-Rāzī. 1955–70. *Kitāb al-ḥāwī fī l-ṭibb*. 23 vols. Hyderabad: Maṭba‘at majlis dā‘irat al-ma‘ārif al-‘uthmāniyah.
- Serjeant, R. B. (tr.). 1997. *Al-Jāhīz. The Book of Misers*. Reading: Garnet. [Great Books of Islamic Civilization]
- Strohmaier, G. (ed.). 1970. *Galen: Über die Verschiedenheit der homoiomeren Körperteile*. Berlin: Akademie-Verlag. [C.M.G. Suppl. Or., III]
- Vagelpohl, U. (ed.). 2014. *Galenī In Hippocratis Epidemiarum librum I commentariorum I–III versio arabica*. Berlin: De Gruyter. [C.M.G. Suppl. Or., V.1]
- . (ed.). 2016. *Galenī in Hippocratis Epidemiarum librum II commentariorum I–VI versio arabica*. 2 vols. Berlin: De Gruyter. [C.M.G. Suppl. Or., V.2]
- Wenkebach, E. and F. Pfaff. (eds.). 1934. *Galenī in Hippocratis Epidemiarum libros I et II*. Leipzig, Berlin: Teubner. [C.M.G., V.10,1]

References

- Baker, M. and K. Malmkjær. (eds.). 1998. *Routledge Encyclopedia of Translation Studies*. London and New York: Routledge.
- Bergsträßer, G. 1913. *Ḥunain ibn Ishāq und seine Schule: Sprach- und literargeschichtliche Untersuchungen zu den arabischen Hippokrates- und Galenübersetzungen*. Leiden: E. J. Brill.

- Brock, S. 1983. 'Towards a History of Syriac Translation Technique', in R. Lavenant (ed.), *III. Symposium Syriacum 1980: Les contacts du monde syriaque avec les autres cultures*, Orientalia Christiana Analecta 221. Rome: Pontificum Institutum Studiorum Orientalium, 1–14.
- . 1991. 'The Syriac Background to Ḥunayn's Translation Techniques', *Aram* 3: 139–62.
- Cooperson, M. 1997. 'The Purported Autobiography of Ḥunayn ibn Ishāq', *Edebiyât* 7: 235–49.
- Endress, G. 1987. 'Die wissenschaftliche Literatur', in H. Gätje (ed.), *Grundriss der arabischen Philologie* 2. Wiesbaden: Reichert, 400–506.
- . 1992. 'Die Wissenschaftliche Literatur' [cont.], in W. Fischer (ed.), *Grundriss der arabischen Philologie* 3: Supplement. Wiesbaden: Reichert, 1–152.
- . 1997. 'The Circle of al-Kindī: Early Arabic Translations and the Rise of Islamic Philosophy', in G. Endress and R. Kruk (eds.), *The Ancient Tradition in Christian and Islamic Hellenism: Studies in the Transmission of Greek Philosophy and Sciences*. Leiden: Research School CNWS, 43–76.
- . 2006. 'The Cycle of Knowledge: Intellectual Traditions and Encyclopaedias of the Rational Sciences in Arabic Islamic Hellenism', in G. Endress (ed.), *Organizing Knowledge: Encyclopaedic Activities in the Pre-Eighteenth Century Islamic World*, Islamic Philosophy, Theology and Sciences. Texts and Studies 61. Leiden and Boston, MA: Brill, 103–33.
- Grignaschi, M. 1974. 'La "Physiognomie" traduite par Ḥunayn ibn Ishāq', *Arabica* 21: 285–91.
- Gutas, D. 1993. 'Aspects of Literary Form and Genre in Arabic Logical Works', in Ch. Burnett (ed.), *Glosses and Commentaries on Aristotelian Logical Texts: The Syriac, Arabic and Medieval Traditions*, Warburg Institute Surveys and Texts. London: Warburg Institute, 29–76.
- . 1998. *Greek Thought, Arabic Culture: The Graeco-Arabic Translation Movement in Baghdad and Early 'Abbāsīd Society (2nd–4th/8th–10th Centuries)*. London and New York: Routledge.
- Hallum, B. 2012. 'The Arabic Reception of Galen's Commentary on the Epidemics', in P. E. Pormann (ed.), *Epidemics in Context: Greek Commentaries on Hippocrates in the Arabic Tradition*, Scientia Graeco-Arabica 8. Berlin: De Gruyter, 185–210.
- Käs, F. 2010. 'Eine neue Handschrift von Ḥunayn ibn Ishāq's Galenbibliographie', *Zeitschrift für Geschichte der arabisch-islamischen Wissenschaften* 19: 135–93.
- Meyerhof, M. 1926. 'New Light on Ḥunayn Ibn Ishāq and his Period', *Isis* 8: 685–724.
- Micheau, F. 1997. 'Mécènes et médecins à Bagdad au IIIe/IXe siècle: Les commanditaires des traductions de Galien par Ḥunayn ibn Ishāq', in D. Jacquart (ed.), *Les voies de la science grecque. Études sur la transmission des textes de l'antiquité au dix-neuvième siècle*, École Pratique des Hautes Études. IVe Section, Sciences historiques et philologiques. V. Hautes études médiévales et modernes 78. Geneva: Droz, 147–79.
- Overwien, O. 2012. 'The Art of the Translator, or: How did Ḥunayn ibn 'Ishāq and His School Translate?', in P. E. Pormann (ed.), *Epidemics in Context: Greek Commentaries on Hippocrates in the Arabic Tradition*, Scientia Graeco-Arabica 8. Berlin: De Gruyter, 151–69.
- Pormann, P. E. 2004. *The Oriental Tradition of Paul of Aegina's Pragmaieia*, Studies in Ancient Medicine 29. Leiden and Boston, MA: Brill.
- Pormann, P. E. and E. Savage-Smith. (2007). *Medieval Islamic Medicine*, The New Edinburgh Islamic Surveys. Edinburgh: Edinburgh University Press.

- Salama-Carr, M. 1990. *La traduction à l'époque abbasside. L'école de Ḥunayn Ibn Ishāq et son importance pour la traduction*, Collection Traductologie 6. Paris: Didier Érudition.
- Sezgin, F. 1970. *Geschichte des arabischen Schrifttums. Band III: Medizin – Pharmazie – Zoologie – Tierheilkunde bis ca. 430 H.* Leiden: E. J. Brill.
- Strohmaier, G. 1965. 'Ḥunain ibn Ishāq und die Bilder', *Klio* 43/45: 525–33.
- . 1991. 'Ḥunain Ibn Ishāq – An Arab Scholar Translating into Syriac', *Aram* 3: 163–70.
- Thillet, P. 1997. 'Réflexions sur les "traductions doubles"', in A. Hasnawi, A. Elamrani-Jamal and M. Aouad (eds.), *Perspectives arabes et médiévales sur la tradition scientifique et philosophique grecque*, Orientalia Lovaniensia Analecta 79. Louvain, Paris: Peeters and Institut du monde arabe, 249–63.
- Tuerlinckx, L. 2008. 'Le lexique du moyen arabe dans la traduction des Discours de Grégoire de Nazianze: présentation de quelques traits caractéristiques et étude des doubles', in J. Lentin and J. Grand'Henry (eds.), *Moyen arabe et variétés mixtes de l'arabe à travers l'histoire*, Publications de l'Institut Orientaliste de Louvain 58. Louvain, Paris: Peeters and Institut Orientaliste de l'Université Catholique de Louvain, 473–87.
- Ullmann, M. (ed.). 2002–7. *Wörterbuch zu den griechisch-arabischen Übersetzungen des 9. Jahrhunderts*. 3 vols. Wiesbaden: Harrassowitz.
- Vagelpohl, U. 2010. 'The 'Abbasid Translation Movement in Context: Contemporary Voices on Translation', in J. Nawas (ed.), *Abbasid Studies II. Occasional Papers of the School of 'Abbasid Studies. Leuven, 28 June – 1 July, 2004*, Orientalia Lovaniensia Analecta 177. Louvain and Paris: Peeters, 245–67.
- . 2011. 'In the Translator's Workshop', *Arabic Sciences and Philosophy* 21: 249–88.