

Ex Oriente Lux
Translating Words, Scripts and Styles
in Medieval Mediterranean Society



Selected Papers

Edited by
Charles Burnett & Pedro Mantas-España

UCOPress

CNERU – The Warburg Institute

CNERU – The Warburg Institute

Serie Arabica Veritas

2

Chief Editors

Charles Burnett • Pedro Mantas España

Advisory Board

Alexander Fidora • Dag Nikolaus Hasse • José Meirinhos

David Nirenberg • Rafael Ramón Guerrero

Ex Oriente Lux
Translating Words, Scripts and Styles
in Medieval Mediterranean Society



Selected Papers

Edited by

Charles Burnett & Pedro Mantas-España

Ex Oriente Lux. Translating Words, Scripts and Styles in Medieval Mediterranean Society. – Córdoba : UCOPress. Córdoba University Press – CNERU (Córdoba Near Eastern Research Unit) – The Warburg Institute (London), 2016

Edited by Charles Burnett – Pedro Mantas-España

(Serie Arabica Veritas; vol. 2)

ISBN : 978-84-9927-267-2

Edit: UCOPress. Córdoba University Press
Campus Universitario de Rabanales
Ctra. Nacional IV, km. 396
14071 – Córdoba, Spain

<http://www.uco.es/ucopress>
ucopress@uco.es

Print: Imprintatecé, S.C.A.
Ingeniero Torres Quevedo, s/n
Córdoba (Spain)

Cover design by Manuel Marcos-Aldón and Juan Pedro Monferrer-Sala

ISBN: 978-84-9927-267-2

DL: CO 1.809-2016

© UCOPress

© CNERU



Research Project FFI2014-53556-R

‘Study and Edition of Biblical and Patristic Greek, Arabic and Latin Manuscripts’

All rights reserved. No part of this book may be reproduced, translated, stored in any retrieval system, nor transmitted in any form without written permission from the Publisher

Printed in Spain

CONTENTS

Preface	9
BURNETT, Charles	
John of Seville and Limia. Introduction	11
HASSE, Dag Nikolaus	
Stylistic Evidence for Identifying John of Seville with the Translator of Some Twelfth-Century Astrological and Astronomical Texts from Arabic into Latin on the Iberian Peninsula	19
MONFERRER-SALA, Juan Pedro	
Destroying the Syriac Manuscript Heritage Lost Leaf of an Arabic <i>Herbarium</i> in <i>Karshūnī</i> Torn from a Codex	45
MASSAIU, Maurizio	
The Stone <i>Muqarnas</i> Vaults of Norman Sicily and their Syrian Counterparts. Transmission of Building Techniques	75
VENTURA, Iolanda	
Gerard of Cremona and the <i>Liber Albenguesim Medicinarum Simplicium et Ciborum</i>	107
MANTAS-ESPAÑA, Pedro.	
Divinatory Arts and their Projection into Western Science	133
POLLONI, Nicola.	
Aristotle in Toledo: Gundissalinus, the Arabs and Gerard of Cremona's Translations	147

FIDORA, Alexander & CECINI, Ulisse	
Nicholas Donin's Thirty-Five Articles Against the Talmud. A Case of Collaborative Translation in Jewish-Christian Polemic	187
 HASSELHOFF, Görg K.	
Rashi and the Dominican Friars	201
 BURMAN, Thomas E.	
Ramon Martí the <i>Potentia-Sapientia-Benignitas</i> Triad and Thirteenth-Century Christian Apologetic	217

Aristotle in Toledo: Gundissalinus, the Arabs and Gerard of Cremona's Translations

Nicola Polloni
Durham University

During his stay in Toledo,¹ Gerard of Cremona translated at least seventy-one Arabic works into Latin.² These constitute a fundamental corpus for the history of medieval philosophy and science. Among these translations, a special place is reserved for Aristotle. Gerard made available to the Latin world a conspicuous number of Aristotelian treatises: *Physica*, *De generatione et corruptione*, *De caelo*, the *Posterior Analytics*, *Meteora*, and two pseudo-Aristotelian writings *De causis proprietatum et elementorum quatuor* and the *Liber de causis*.³ In doing so, Gerard contributed considerably to the basis on which the thirteenth-century philosophical debate on natural philosophy would be grounded. Gerard was not alone, however, and his corpus of translations should be considered alongside those of his Toledan colleague, Dominicus Gundissalinus, and those of the previous translators from Arabic and Greek into Latin, such as Hermann of Carinthia and Johannes Hispalensis.

¹ While the date of Gerard's death is clear (1187), the date of his arrival in Toledo is uncertain. The first record of Gerard's presence in the Toledan chapter dates May 1157 (See F.J. Hernández, *Los cartularios de Toledo. Catálogo documental*, Madrid: Fundación Ramón Areces, 1985, pp. 116-117, n. 119). Even if it is possible that Gerard arrived in Toledo before 1157, the assumption that the translations were sponsored by the Toledan archbishopric should entail that Gerard's activity occurred during the period he was a member of the cathedral chapter, and thus, his translations should have been realized between 1157 and 1187.

² According to the statement by his pupils in the eulogy prepared in 1187 at Gerard's death. See, Ch. Burnett, 'The Coherence of the Arabic-Latin Translation Programme in Toledo in the Twelfth Century', *Science in Context* 14 (2001), pp. 249-288 (pp. 275-281).

³ It should be noted that the *Metaphysica* is missing from Gerard's translations; that available at the time through the *translatio vetustissima* by James of Venice (consisting of books I-IV) and the anonymous *Metaphysica vetus*, were both limited to the first four books of Aristotle's work. For the medieval translation of Aristotle's *Metaphysics*, see M. Borgo, 'Latin Medieval Translations of Aristotle's *Metaphysics*', in *A Companion to the Latin Medieval Commentaries on Aristotle's Metaphysics*, eds. G. Galluzzo and F. Amerini, Turhout: Brepols, 2003, pp. 19-57.

These translations spread rapidly throughout Europe and played an important role in the philosophical shift toward Aristotelianism characteristic of the thirteenth century. In Paris, their first reception is marked by a twofold tendency. On the one hand masters such as Roland of Cremona, William of Auvergne, and Alexander of Hales were deeply influenced by Aristotle's works. On the other hand, David of Dinant, Amalric of Bena, and the enigmatic Mauritius Hispanus were condemned for daring theological positions constructed on the basis of Aristotelian texts, newly translated. Indeed, Aristotle's natural philosophy and its commentators were banned in Paris in 1210 and 1215. In England it is possible to detect the first traces of the 'Toledan' Aristotle at the same period, the beginning of the thirteenth century, in significant authors directly linked to Paris: Alexander Neckham, Edmund of Abingdon, and John Blund. It is, nevertheless, only with Robert Grosseteste's commentaries on *Physics* and *Posterior Analytics* that it is possible properly to speak of a shift toward Aristotle in the British Isles.

At least since the first decade of the thirteenth century, therefore, the Aristotelian texts translated by Gerard of Cremona were studied, used, and quoted in the Île-de-France and England. Nonetheless, these texts had been available since at least 1187, the year in which Gerard of Cremona died in Toledo, and probably beforehand.⁴ The period of time between the composition and completion of the translations and the first attested receptions of Aristotle in England and France indicates a chronological gap with respect to the use of these sources and texts.⁵ A possible contribution to help clarify this thorny question may be suggested, namely, to examine the influence of Aristotle's texts translated by Gerard before their spread throughout the continent. That is to say, to consider their reception in the Castilian capital, Toledo, where, during the second half of the twelfth century, at least three philosophers, Abraham ibn Daud, Dominicus Gundissalinus, and Daniel of Morley, are known to have lived and worked.

⁴ Indeed, it should be suggested that some of the first Arabic-into-Latin translations of Aristotle, as well as those of Avicenna, al-Fārābī, and Ibn Gabirol, had begun to circulate between the end of 1160s and the 1170s. Avicenna's *De anima*, for instance, was surely available before 1166, since the Latin translation is dedicated to the Toledan archbishop John II, who died in 1166. This work had to be prepared at some point before that date.

⁵ This situation mirrors that which Amos Bertolacci pointed out regarding the first decades of the Latin reception of Avicenna's works which had been translated in Toledo by Gundissalinus in the very same period while Gerard was translating Aristotle. See A. Bertolacci, 'On the Latin Reception of Avicenna's *Metaphysics* before Albertus Magnus: An Attempt at Periodization', in *The Arabic, Hebrew and Latin Reception of Avicenna's Metaphysics*, eds. A. Bertolacci and D.N. Hasse, Berlin: De Gruyter, 2012, pp. 197-223.

Of these three, Gerard's influence was probably very limited on Abraham ibn Daud. This Jewish philosopher had a profound knowledge of Aristotle,⁶ but he also enjoyed direct access to the Arabic versions of the Aristotelian writings before and after Gerard's translations. In a similar fashion, it is difficult to trace the impact of Gerard's versions of Aristotle's writings with respect to Daniel of Morley. Daniel supposedly spent a few years between the mid-1170s and the mid-1180s in Toledo, where he claimed to have studied with Gerard of Cremona. The outcome of his studies might reasonably be expected to be, and up to a certain degree are, condensed in his philosophical synthesis, the *Philosophia*.⁷ Charles Burnett has shown, however, that both the account of the Toledan period given by Daniel and the access he had to the Toledan materials have to be reassessed, and Daniel of Morley's knowledge of Aristotle seems to be quite separate from Gerard of Cremona's translation efforts.⁸

Dominicus Gundissalinus, then, seems to be the only candidate in which influence from Gerard's Aristotelian translations in Toledo can be detected. Gundissalinus was indeed a colleague of Gerard: both translated from Arabic into Latin, working under the patronage of the Toledan archbishopric, and were part of the cathedral chapter, the former as archdeacon of Cuéllar, the latter as *magister*.⁹ Furthermore, Gundissalinus was a keen reader of Arabic philosophy, with a particular interest in Arabic Aristotelianism, notably Avicenna and Ibn Gabirol. The results of his studies are preserved in his original philosophical writings, in which Gundissalinus gathered together and developed many different doctrines and textual excerpts from a wide range of sources. As a translator, Gundissalinus worked in collaboration with Abraham ibn Daud and Johannes Hispanus on at least twenty-five translations. These are mainly works by al-Fārābī and Avicenna, but also include al-Kindī, Ibn Gabirol and the Brethren of Purity. However, quite surprisingly, while Gerard was translating some of the most important Aristotelian texts, Gundissalinus did not work on even one writing by Aristotle and, more precisely, apart from Alexander of Aphrodisia's *De intellectu et intellecto*, all of

⁶ See Y. Tzvi Langermann, 'Fragments of Commentaries on Aristotle's *Physics* from the David Kaufmann Genizah Collection, by Ibn Daud and Others (?)', *Aleph* 16 (2016), pp. 39-60.

⁷ See Daniel of Morley, *Philosophia*, ed. Maurach, *Mittellateinisches Jahrbuch* 14 (1979), pp. 204-255 (pp. 212-213).

⁸ Ch. Burnett, 'The Institutional Context of Arabic-Latin Translations of the Middle Ages: A Reassessment of the 'School of Toledo'', in *Vocabulary of Teaching and Research Between Middle Ages and Renaissance. Proceedings of the Colloquium London, Warburg Institute, 11-12 March 1994*, ed. O. Weijers, Turnhout: Brepols, 1995, pp. 214-35. Daniels's quotations of Aristotle's *Physics*, *De celo* and *De sensu et sensato* are taken, indeed, from Pseudo-Avicenna *Liber celi et mundi*.

⁹ See for example J. Hernandez, *Los Cartularios de Toledo. Catalogo Documental*, p. 117, n. 119.

Gundissalinus's translations are Latin versions of works whose author was Arabic or Jewish.

Gundissalinus was not only a translator. As indicated above, he wrote a number of original works dealing with psychology, epistemology, and metaphysics, and his activity can also be linked to the writing of the *Liber mahameleth*, a treatise on commercial mathematics.¹⁰ All these texts were written presumably in Toledo between 1162 and 1181.¹¹ In them Gundissalinus gives his own answers to some of the fundamental questions posed in contemporary philosophical debate; his answers based upon his translating activity as well as those translators who preceded him, for example, Johannes Hispalensis and Hermann of Carinthia. In this light a clear influence of Gerard's translations, and especially of Aristotle's writings, might be expected, from the relevance of their author and the close relationship between the two translators.

Alexander Fidora has shown, however, that some passages of Gundissalinus' *De divisione philosophiae* depend on Aristotelian texts that were not yet translated, such as the *Ethica Nicomachea*, whose first Latin translation will be produced only a few decades later by Robert Grosseteste.¹² This implies that Gundissalinus and his collaborators had access to a larger number of texts than those which they eventually translated, a hypothesis with far-reaching consequences. In the same connection the wide range of Arabic sources used by Gundissalinus in his writings would have provided him with a huge number of mediated references to Aristotle's works. Authors like al-Kindī, for instance, often quote Aristotle by name, recording his original thought or, in other cases, a revised version consistent with the original. Any analysis of the possible influence of Gerard's translations on Gundissalinus must be accompanied by the examination of his Arabic and Latin sources from which he may have drawn the quoted passages, including

¹⁰ *Liber mahameleth*, ed. A.-M. Vlasschaert, Stuttgart: Franz Steiner Verlag, 2010. See also the fundamental studies by Ch. Burnett, 'John of Seville and John of Spain: a Mise au Point', *Bulletin de philosophie médiévale* 44 (2002), pp. 59-78; and G. Freudenthal, 'Abraham Ibn Daud, Avendauth, Dominicus Gundissalinus and Practical Mathematics in Mid-Twelfth Century Toledo', *Aleph* 16/1 (2016), pp. 61-106.

¹¹ For a comprehensive synthesis of Gundissalinus's biography, see N. Polloni, 'Elementi per una biografia di Dominicus Gundisalvi', *Archives d'Histoire Doctrinale et Littéraire du Moyen Âge* 82 (2015), pp. 7-22.

¹² See A. Fidora, *Domingo Gundisalvo y la teoría de la ciencia árabe-aristotélica*, Pamplona: EUNSA, 2009. In his study, Fidora shows that Gundissalinus had access to a range of Aristotelian works not in Latin but in Arabic translation. This hypothesis is fascinating, and the references produced by Fidora demonstrate that the Toledan library was far more broadly stocked than previously thought. The present discussion does not focus on Gundissalinus's interpretation of Aristotle, nor on Aristotle's influence on Gundissalinus, but on the explicit references to Aristotle made by Gundissalinus in his original writings.

the Arabic translations and the mediation of the Arabic Aristotelian philosophers. Indeed, the possible influence of Gerard's translations of Aristotle on Gundissalinus can be assessed only once the Arabic and Latin mediation by third sources has been taken into account.

The importance of Arabic and Latin mediation of Aristotle's writings on Gundissalinus's access to them is confirmed simply by analysis of the direct references to Aristotle. Gundissalinus quotes Aristotle by name fifteen times:

Writings by Dominicus Gundissalinus	No. of occurrences of Aristotle's name
<i>De unitate et uno</i>	0
<i>De scientiis</i>	0
<i>De anima</i>	4
<i>De divisione philosophiae</i>	10
<i>De processione mundi</i>	1
Total	15

Aristotle appears by name in just three of Gundissalinus's works: *De divisione philosophiae*, *De anima*, and *De processione mundi*. There is no mention of Aristotle in the *De unitate et uno*, one of Gundissalinus's first philosophical writings, nor in his 'creative translation' of al-Fārābī's *Ihsa al-'Ulūm*, the *De scientiis*. This is hardly a surprise. The *De unitate* is a very short treatise on metaphysical Oneness and Unity, and its main and almost only source is Ibn Gabirol's *Fons vitae*. The *De scientiis* lies, stylistically, on the border between being a translation and a re-elaboration of al-Fārābī's writing. Gundissalinus modifies the original text in which context explicit reference to Aristotle may have been considered superfluous. It is interesting to note that when Gundissalinus condensed his own systematization of scientific knowledge in the *De divisione philosophiae*, the number of references to Aristotle becomes more conspicuous.

Two-thirds of the occurrences of Aristotle's name in the works by Gundissalinus are found, indeed, in the *De divisione philosophiae*: ten occurrences out of fifteen. These are spread throughout the treatise, and reveal Gundissalinus's development of a network of authoritative support for his epistemological and gnoseological theory on the division of sciences and the justification of many disciplines discussed. The distribution of the occurrences in the chapters of the *De divisione* is as follows:

Chapters of <i>De div. phil.</i>	No. of occurrences
<i>Prologus</i>	1
<i>De scientia divina</i>	1

<i>De grammatica</i>	1
<i>De rhetorica</i>	1
<i>De logica</i>	2
<i>De medicina</i>	1
<i>De arithmetica</i>	1
<i>De part. practicae philosophiae</i>	2
Total	10

The authoritative role played by these references is clearly related to their thematic context: six are inserted within Gundissalinus's discussion of epistemology, specifically dealing with the structure of sciences¹³, the relation between knowledge and soul¹⁴, and, above all, the problem of the individuation of the proper subject of each science¹⁵. On the remaining four occasions the references to Aristotle transcend the general epistemological problems to deal with a particular discipline, namely rhetoric, logic and politics.¹⁶

Analysis of the *De anima* offers a similar scenario. Aristotle's name is mentioned four times, and it is worth noticing that the references cover three different chapters:

Chapters of <i>De anima</i>	No. of occurrences
Ch. 2, <i>Quid sit anima</i>	2
Ch. 4, <i>An sit creata una vel multae</i>	1
Ch. 5, <i>An fuerint animae creatae ab initio mundi</i>	1
Total	4

Aristotle is explicitly mentioned only in the first part of the *De anima*, which is dedicated to the discussion of the definition and origin of the soul. These references are thematically consistent with the specific topic of the chapter in which

¹³ Dominicus Gundissalinus, *De divisione philosophiae*, ed. Baur, in *Beiträge zur Geschichte der Philosophie und Theologie des Mittelalters* 4/2, Münster: Aschendorff, 1903, pp. 3-142, (p. 15,9-15 and pp. 141,24-142,6).

¹⁴ Dominicus Gundissalinus, *De divisione philosophiae*, pp. 44,22-45,4.

¹⁵ Dominicus Gundissalinus, *De divisione philosophiae*, pp. 36,21-37,2, p. 71,4-6, and p. 92,5-12.

¹⁶ The occurrences in the rhetorical and medical parts of the *De divisione* (p. 67,7-10 and p. 85,17-22), the second occurrence on logic (pp. 82,8-83,6), and the first occurrence on the discussion of practical philosophy (p. 136,8-13). These passages will be analysed in the following pages.

they are found: the Aristotelian definition of soul¹⁷, its relation to life¹⁸, and the definition of time¹⁹. Gundissalinus, it would appear, was not willing to refer to Aristotle's authority in the final part of his treatise, a dense discussion of the psychological powers expounded in chapters nine and ten which covers almost half the length of the treatise and constitutes a precise development of Avicenna's *De anima*. In a similar fashion Aristotle is not named in the middle chapters of Gundissalinus' work, where he demonstrates the hylomorphic composition of the soul, a doctrine wholly unacceptable from an orthodox Aristotelian perspective.

Finally, the *De processione mundi* offers just one direct and explicit reference to Aristotle, during the discussion of creatural composition.²⁰ The passage quoted by Gundissalinus in his cosmological writing displays the very same text presented in his *De anima* in relation to the definition of time: this would appear to show clearly that Gundissalinus had found in Aristotle a fundamental authority in relation to the problem of time.

The references to Aristotle made by Gundissalinus, therefore, cover a wide number of themes and doctrines, passing from epistemological to physical and psychological features. The role played by this scheme of occurrences seems to be crucial to Gundissalinus's understanding and presentation of the text, since the Toledan philosopher is quite sparing in direct references by name to his sources, be they Greek, Arabic, or Latin. Nonetheless, not all the occurrences of Aristotle's name seem, in fact, to derive or refer to his writings, and only a part of those actually referring to Aristotle's works seem to be based on Gerard of Cremona's translation.

Gundissalinus, Aristotle, and the Latins

The majority of the references to Aristotle in the *De divisione philosophiae* concern various aspects of the main epistemological problem dealt with in Gundissalinus's treatise, that is, the hierarchical and reciprocal structuring of the scientific and philosophical disciplines. At the same time, some of the occurrences are focused on peculiar disciplinary aspects. Two in particular present an interesting posi-

¹⁷ Dominicus Gundissalinus, *De anima*, ed. Alonso Del Real, in *El Tractatus de anima atribuido a Dominicus Gvundi[s]salinus*, M.J. Soto Bruna and C. Alonso Del Real, Pamplona: EUNSA, 2009, pp. 64-118, (p. 84,7-9 and p. 96,6-12).

¹⁸ Dominicus Gundissalinus, *De anima*, p. 116,9-13.

¹⁹ Dominicus Gundissalinus, *De anima*, p. 128, 2-5.

²⁰ Dominicus Gundissalinus, *De processione mundi*, ed. Bülow, in *Beiträge zur Geschichte der Philosophie und Theologie des Mittelalters* 24/3, Münster: Aschendorff, 1925, pp. 1-56, (p. 49,3-11).

tion. The first is part of the discussion of rhetoric, a discussion which is largely based, as that of grammar, on Chartrian material.²¹ Presenting the *officium* of rhetoric, Gundissalinus affirms:

[A.] *Officium autem rethorice artis est id, quod orator debet facere secundum artem rethoricam. Hoc autem est dicere apposite ad persuadendum i. e. dicere ea, que conveniunt et sufficiunt ad persuadendum, etsi orator non persuadet. Unde Aristoteles in primo Topicorum dicit: Orator non semper persuadebit, sed si de contingentibus nihil omiserit, sufficienter eum propositum suum habere dicemus*'.²²

The *officium* of rhetoric is the persuasion of the public through the rhetorical art: if what the orator says is not sufficient to this task, there is no persuasion and, thus, he does not fulfil the purpose of the discipline. Nonetheless, and here Gundissalinus refers to Aristotle's words, even though the orator does not always persuade the public, it can be said that he has sufficiently accomplished his purpose if he does not omit any of the means available to him.

The same passage is quoted some pages later in the *De divisione philosophiae*, in the context of the discussion of medical science. Dealing with the *finis* of medicine, Gundissalinus states that:

[B.] *Finis quoque duplex est, scilicet vel per regimen sanitatis conservatio vel per curationem sanatio, i.e. aegritudinis, vel neutralitatis expulsio. Aliquando autem medicus hunc finem non consequitur; non est enim in medico semper, ut relevetur aeger; sed teste Aristotele, si de contingentibus nil omiserit, nihilominus eum finem suum consequi dicemus*'.²³

The Latin words used are slightly different, but the sense is the same: the physician does not always achieve the healing of the patient, but if he does not omit any of the available means, it should nonetheless be said that he has achieved the purpose of his science. The same quotation is, then, used by Gundissalinus in two very different contexts - the discussion of rhetoric and that of medicine. In both cases, the reference softens the adherence of the actor to the purpose of his sci-

²¹ See A. Fidora, 'Le débat sur la création: Guillaume de Conches, maître de Dominique Gundissalvi?', in *Guillaume de Conches: Philosophie et science au XII siècle*, eds. B. Obrist and I. Caiazzo, Firenze: SISMEL - Edizioni del Galluzzo, 2011, pp. 271-288; and K.M. Fredborg, 'The Dependence of Petrus Helias' *Summa super Priscianum* on William of Conches' *Glosae super Priscianum*', *Cahiers de l'Institut du Moyen Âge grec et latin* 11 (1973), pp. 1-57.

²² Dominicus Gundissalinus, *De divisione philosophiae*, p. 67,4-10.

²³ Dominicus Gundissalinus, *De divisione philosophiae*, p. 85,17-22.

ence. Both the orator and the physician accomplish their discipline even when the public is not persuaded or the patient is not healed. In order to carry out their office, they both have to use all the means at their disposal ('de contingentibus nil omiserit'), the application of which does not always or necessarily entail the realization of the expected effect on the subject.

In applying this remark to rhetoric and medicine, Gundissalinus is following the text of the *Topica*, where Aristotle clearly refers the aforementioned passage to both these disciplines:

'Habebimus autem perfecte methodum quando similiter habemus ut in rethorica et medicina et huiusmodi potentiis. Hoc autem est ex contingentibus facere quae appetimus. **Neque enim rethor omni modo suadebit neque medicus sanabit; sed si ex contingentibus nichil omiserit, sufficienter eum habere disciplinam dicemus**'.²⁴

The textual dependence of Gundissalinus's excerpts on Aristotle's *Topica* is striking. The first part of the passage – 'sed si ex contingentibus nichil omiserit' – is repeated in both of the quotations with a slight modification of the complement. The second part is partly consistent, since Gundissalinus changes the Aristotelian reference to the discipline in a reference to the purpose (*propositum, finis*) of the science, an alteration evidently designed to give greater coherence to the integration of the quotation in the context of the discussion. There is no doubt then, that Gundissalinus is here directly quoting Aristotle, and is doing so with the translation of the *Topica* given by Boethius.

Boethius plays a fundamental role in the ordering of the *De divisione philosophiae*. Gundissalinus uses Boethius on many occasions and often to facilitate the acceptance of doctrines somewhat 'alien' to the Latin philosophical discussion (that is to say, derived from the Arabic writings translated into Latin), an attitude pointed out and discussed by Alexander Fidora.²⁵ Moreover, the study of Boethius's genuine works and Aristotelian translations, of consistent appeal throughout the Middle Ages, finds its probable apex during the twelfth century and in Chartres, where Gundissalinus in all probability studied before 1148. In this way a reference to Aristotle's *Topica* causes no particular surprise, and its use in both the rhetorical and medical discussions displays Gundissalinus's preoccupation with the renewed scientific organization he proposes in the *De divisione*.

²⁴ Aristotle, *Topica*, I, 3, 101b5-11, *translatio Boethii*, ed. L. Minio-Paluello, Leiden: Brill, 1969, pp. 7,23-8,3.

²⁵ See A. Fidora, *Domingo Gundisalvo y la teoría de la ciencia arábigo-aristotélic*; and A. Fidora, 'La metodología de las ciencias según Boecio: su recepción en las obras y traducciones de Domingo Gundisalvo', *Revista española de filosofía medieval* 7 (2000), pp. 127-136.

There is more to the influence of Chartrian speculation with respect to Gundissalinus's knowledge of Aristotle. Consideration of a further occurrence of Aristotle's name in the *De divisione philosophiae* suggests this wider hinterland of reference. During his discussion of grammar, Gundissalinus offers a brief digression on the presence of scientific knowledge in the human soul:

[C.] *Disciplina vero dicitur respectu discipuli, quia discitur; sed scientia, cum iam in anima retinetur; nam dicente Aristotele, omnis scientia in anima est. Sed quia omnis scientia prius est in dispositione et postea in habitu, ideo cum scientia sit habitus mentis, appellatur facultas, quia dat homini facultatem operandi secundum artem*'.²⁶

The term 'disciplina' is applied to the disciple because he learns (*discere* in Latin) and the science is kept in his soul, for Aristotle states that the whole science is in the soul. Since science is before *in dispositione* and then *in habitu*, and because it is the *habitus mentis*, science is to be called a faculty, for it gives to human beings the faculty of acting through its practice. The reference to Aristotle is here mixed with a direct quotation from Isidore of Seville's *Etymologiae* ('Discipulus a disciplina dictus: disciplina autem a discendo vocata').²⁷ However, the question remains as to which work by Aristotle, if any, Gundissalinus refers. On the one hand, the assertion that science is in the soul is quite common in both Greek, Arabic, and Latin philosophy, and it is perfectly plausible that Gundissalinus had derived this passage from an intermediary source, or had condensed it from a longer and more detailed discussion. Nonetheless, while the beginning of Aristotle's *Categoriae*²⁸ does not seem close enough to Gundissalinus's reference to be

²⁶ Dominicus Gundissalinus, *De divisione philosophiae*, ed. Baur, pp. 44,22-45,4.

²⁷ Isidore of Seville, *Etymologiae*, X, ed. Lindsay, Oxford: Oxford University Press, 1911, p. 67.

²⁸ Aristotele, *Categoriae*, I, 1a20-1b9, ed. Minio Paluella, in Aristoteles Latinus, *Categoriae, vel Praedicamenta: Translatio Boethii*, ed. L. Minio Paluella, Bruges - Paris: Desclée de Brouwer, 1961, pp. 5,22-6,13: 'Eorum quae sunt alia de subiecto quodam dicuntur, in subiecto vero nullo sunt, ut homo de subiecto quidem dicitur aliquo homine, in subiecto vero nullo est; alia autem in subiecto quidem sunt, de subiecto vero nullo dicuntur (in subiecto autem esse dico quod, cum in aliquo sit non sicut quaedam pars, impossibile est esse sine eo in quo est), ut quaedam grammatica in subiecto quidem est in anima, de subiecto vero nullo dicitur, et quoddam album in subiecto est in corpore (omnis enim color in corpore est); alia vero et de subiecto dicuntur et in subiecto sunt, **ut scientia in subiecto quidem est in anima**, de subiecto vero dicitur de grammatica; alia vero neque in subiecto sunt neque de subiecto dicuntur, ut aliquis homo vel aliquis equus; nihil enim horum neque in subiecto est neque de subiecto dicitur. Simpliciter autem quae sunt indiuidua et numero singularia nullo de subiecto dicuntur, in subiecto autem nihil ea prohibet esse; quaedam enim grammatica in subiecto est'.

considered as its source, a similar assertion of the presence of the science in the soul can be detected perhaps in Aristotle's *De generatione animalium* Book I. In the Latin translation from Arabic made by Michael Scot at the beginning of the thirteenth century the following passage occurs:

'Et non quilibet mas spermatizat; et in maribus qui spermatizant non dicitur quod illud sperma sit pars concepti, sicut neque dicitur quod carpentarius sit pars materiae ligni, sed dicitur aspectus et forma, quoniam figurator est illius materiae per eius motum. **In anima autem est forma et scientia**, et per scientiam moventur manus aliquo modo motionis, et per illum motum erit quod generatur'.²⁹

The context and the meaning of this sentence is, nevertheless, completely inconsistent with Gundissalinus's excerpt, notwithstanding the fact that there is no evidence that the Arabic version of the *De generatione animalium* was present in Toledo before Michael Scot's translation. On the contrary, Gundissalinus's source seems to be a Latin philosopher, Hermann of Carinthia, who writes in his *De essentiis*:

'Quoniam ergo cause speculative ipsarum rerum consanguineae sunt, et ipsa speculatio eiusdem numeri divisionem recipit. **Omnis autem speculatio in natura animae**. Accedit igitur ad compositionem ratio, ad dispositionem demonstratio, ad causam moderatricem intellectus'.³⁰

In this excerpt, Hermann makes explicit reference to the presence of every speculation in the nature of the soul. At first sight, there is not a striking proximity with Gundissalinus's text; indeed from a lexical standpoint they are different. Where Gundissalinus speaks of *omnis scientia*, Hermann refers to *omnis specu-*

²⁹ Aristotele, *De generatione animalium*, I, 22, 730b15, ed. Van Oppenraaij, in *De Animalibus. Michael Scot's Arabic-Latin Translation, Volume 3 Books XV-XIX: De generatione animalium*, ed. A.M.I. Van Oppenraaij, Leiden - New York - Köln: Brill, 1992, p. 53. The Arabic-into-Latin version of the text shows a certain degree of originality in comparison to the Greek original: 'The male does not emit semen at all in some animals, and where he does this is no part of the resulting embryo; just so no material part comes from the carpenter to the material, i.e. the wood in which he works, nor does any part of the carpenter's art exist within what he makes, but the shape and the form are imparted from him to the material by means of the motion he sets up. It is his hands that move his tools, his tools that move the material; it is his knowledge of his art, and his soul, in which is the form, that move his hands or any other part of him with a motion of some definite kind, a motion varying with the varying nature of the object made' (Aristotle, *On the Generation of Animals*, trans. by J. Barnes, Princeton: Princeton University Press, 1991, p. 29).

³⁰ Hermann of Carinthia, *De essentiis*, ed. Burnett, Leiden: Brill, 1982, 72vA-B, p. 180,12-15.

latio, and where the former states that the science is in the soul, the latter affirms that the speculation is in the *nature* of the soul. Nonetheless, there is a clear bond linking together science and speculation since the first is the effect of the second. Nor does the absence of reference to the nature of soul in Gundissalinus entail a doctrinal difference with Hermann. Gundissalinus does not imply that the totality of science is, in a quite Platonic fashion, in every soul, but that the totality of science can be acquired by the soul, that is, that the soul can know the whole science. In this way, the two texts seem to be coherent. Moreover, it should be noted that Gundissalinus quotes the second part of Hermann's text, together with Boethius, in his *De processione mundi*, when he states that:

'Ad speculationem autem tria sunt necessaria: ratio scilicet, demonstratio et intelligentia. **Accedit enim ad compositionem ratio, demonstratio ad dispositionem, ad causam intelligentia.** Unde dicitur, quod in naturalibus rationaliter, in mathematicis disciplinaliter, in theologicis intelligentialiter versari oportet'.³¹

The most probable source of Gundissalinus's reference to Aristotle is, therefore, Hermann of Carinthia. The Toledan philosopher had a profound respect and knowledge of Hermann's *De essentiis*, which influenced a significant part of his reflection on the secondary causality in the institution of the world. In relating Hermann's text to Aristotle, Gundissalinus must have thought that the origin of Hermann's position on that issue was coincident with Aristotle's. That said, this is not the only case when Aristotle's name hides a different, and often Arabic, source.

Gundissalinus, Aristotle and the Arabs

The identification of an intermediary Arabic source for some of the occurrences of Aristotle's name in the works by Gundissalinus is consistent with the *modus operandi* of the Toledan philosopher: Gundissalinus, indeed, makes frequent use of a wide range of Arabic sources, mainly, but not always, that he had translated into Latin. Some of these sources present the name of Aristotle in the original text quoted by Gundissalinus. In other cases, Gundissalinus adds Aristotle's name to the quotations from his sources, possibly to attribute the doctrine discussed to the authority, in all senses, of Aristotle, whose overall philosophical production, and his natural and metaphysical writings in particular, were still known only partially by Gundissalinus's contemporaries.

³¹ Dominicus Gundissalinus, *De processione mundi*, p. 2,9-14.

A clear example of the first kind of reference to Aristotle comes in the first two occurrences of his name presented in Gundissalinus's *De anima*, II. These two references are thematically connected to each other, for they constitute the introduction and then the discussion of Aristotle's definition of soul:

[D1.] Quibus omnibus contemptis quasi frivolis et jam destructis quid philosophorum principes **Plato et Aristoteles** aequae dixerunt animam esse videamus'.³²

[D2.] **Aristoteles** autem sic **diffinit animam** dicens: **Anima est prima perfectio corporis naturalis instrumentalis viventis potentialiter. Perfectio autem alia est prima alia secunda.** Prima perfectio est per quam species sit in effectu ut figura ensi. Secunda perfectio est, ut aliquid eorum, quae consequuntur speciem rei aut ex actionibus eius aut ex passionibus eius sicut est incidere ensi. **Prima perfectio est scientia medicinae in cognitione, secunda perfectio est scientia medicinae in operatione**'.³³

Even though it might be tempting to suppose that Aristotle's *De anima* was the direct source for this passage, it is not the case. The quotation is derived in fact from an Arabic work translated in Spain a few decades before Gundissalinus: Qusṭā ibn Lūqā's *De differentia animae et spiritus*, translated by Johannes Hispalensis.³⁴ In a famous passage of his work, quoted also by Hermann of Carinthia,³⁵ Ibn

³² Dominicus Gundissalinus, *De anima*, p. 84,7-9.

³³ Dominicus Gundissalinus, *De anima*, p. 96,6-12

³⁴ Ch. Burnett, 'Magister Iohannes Hispanus: Towards the Identity of a Toledan Translator', in *Comprendre et maîtriser la nature au Moyen Âge. Mélanges d'histoire des sciences offerts à Guy Beaujouan*, ed. G. Comet, Genève: Droz, 1994, pp. 425-436; and Ch. Burnett, 'John of Seville and John of Spain: a Mise au Point'.

³⁵ Cf. Hermann of Carinthia, *De essentiis*, ed. Burnett, 71vE-G, pp. 174,21-176,3: 'Recte quidem quale Plato diffinit, Aristotiles describit. Plato quidem in Cadone, "Anima est" inquit "substantia incorporea corpus movens". Aristotiles vero in libro De anima sic: "Anima est" ait "perfectio corporis naturalis instrumentalis potentia viventis". Et alibi: "Anima est perfectio corporis agentis et viventis potentia". Videtur itaque diffinitio quidem magis propria tertio generi, seu quia solum hoc incorporeum dicimus, cum in germine sive animali bruto nichil supersit ultra triplicem illum spiritum quo vivit, spirat, sentit, quem corpus esse secundum originis rationem scimus, seu quia neutrum illorum substantia sit, si potius dicamus ea duo animandi genera virtutes anime mundi, quemadmodum visum est eis qui si corpora esse concedant, superesse sibi putant alias item eis corporibus animas requirendas'.

Lūqā expounds and discusses the definitions of soul proposed by Plato, Aristotle, and Galen.³⁶ Regarding Aristotle, Ibn Lūqā remarks that:

‘Et quia iam exposuimus definitionem Platonis, qua definivit animam, et patefecimus omnium partium eius interpretationem, nunc tractemus de definitionis expositione Aristotelis philosophi. **Aristoteles** philosophus **definivit** eam **sic: quod sit perfectio corporis agentis et viventis potentialiter. In libro autem, quem fecit de anima**, talis est definitio: **Anima est perfectio corporis naturalis, instrumentalis, potentialiter vitam habentis**. Redeamus ad hoc, quod potentialiter dixit, quia de rebus quaedam sunt potentialiter, et quaedam perfecte. [...] Dicamus ergo, quod **perfectio est duobus modis: est enim perfectio prima et secunda**. Prima namque perfectio in homine est sapientia atque magisterium; secunda vero perfectio in homine est studere et operari ex his, quae novit ex scientiis et magisteriis. **Verbi gratia: medicus dicitur perfectio prima propter scientiam medicinae; cum vero coeperit operari, tunc dicitur perfectio secunda**’.³⁷

Comparison to Gundissalinus’s text leaves no doubt about its dependency on Ibn Lūqā’s writing. The two definitions presented: the soul as ‘perfectio corporis agentis et viventis potentialiter’ and as ‘perfectio corporis naturalis, instrumentalis, potentialiter vitam habentis’, are condensed by Gundissalinus into a single definition, stating that the soul is ‘prima perfectio corporis naturalis instrumentalis viventis potentialiter’. Then, the Toledan philosopher presents the discussion on the two *perfectiones* in a shorter version than that of Ibn Lūqā, possibly revealing dependence on a further source. By the end of the paragraph Gundissalinus comes back to Ibn Lūqā, quoting the example of medicine. In this case, the appearance of Aristotle’s name is in the first place as a result of the same quotation from an Arabic source in which the Greek philosopher is directly mentioned, which should also take into account how sparing Gundissalinus was of direct references to his sources.³⁸

³⁶ Qusṭā ibn Lūqā, *De differentia animae et spiritus*, ed. Barach, Innsbruck: Wagner, 1878, pp. 130-131: ‘Narrare autem aliquid de anima, certissime grave est et valde difficile. Et hoc testatur diversitas sive discordia praecipue philosophorum, scilicet **Platonis et Aristotelis et Galeni** nec non Bendedis et eorum similiter, qui post illos venerunt. Sed nos commemorabimus utrasque definitiones, quibus definiebat eam **Plato atque Aristoteles**, et eorum definitiones exponemus, et in expositione uniuscuiusque ipsarum utamur argumentis probabilibus, et sequatur haec narratione virtutis animae’.

³⁷ Qusṭā ibn Lūqā, *De differentia animae et spiritus*, pp. 134-135

³⁸ Some of the manuscript witnesses of the Latin translation of *De differentia animae et spiritus* ascribe the authorship of this text to Aristotle (see G. Lacombe, *Aristoteles latinus, Pars prior*, Roma: La Libreria dello Stato, 1939, p. 94). Nevertheless, Gundissalinus wrote his treatise in Toledo, and the previous bishop of this city, Raymond, is the very recipient of Johannes’s

A similar situation emerges in further occurrences. In the *De divisione philosophiae*, when dealing with the division of practical philosophy, Gundissalinus begins a short digression on the universal value of philosophy as order of the soul:

‘[E.] Ad quam vero partem philosophiae spectet, ideo quaeritur, quia **Aristoteles dicit, quod scientia cuiusque rei, quae inquiritur, continetur sub philosophia, quae est omnis rei scientia.** Nam quia **philosophia non est nisi ordo animae**, idcirco convenit, ut **philosophia dividatur in duas partes, quae sunt scientia et operatio, sicut anima dividitur in duas partes, quae sunt sensus et ratio**, videlicet ut per scientiam cognoscatur pars rationalis et per operationem pars sensibilis’.³⁹

Aristotle, according to Gundissalinus, claims that the science of every thing is contained by philosophy, which is the science of everything, for philosophy has the same order as the soul. Philosophy is divided, therefore, into two parts, science and operation, mirroring the division of the psychological powers into reason and sense. The rational part knows through science while the sensible power knows through operation, or, as it might be expressed, experience.

The passage in question is a direct quotation from al-Kindī’s *De quinque essentiis*, translated by Gerard of Cremona, as appears by the comparison between the two excerpts:

‘Sapiens **Aristoteles** ubi dialecticam incepit dixit quod **scientia cuiusque rei, quae inquiritur, cadit [vel continetur] sub philosophia, quae est omnis rei scientia.** Oportet ergo in primis ut philosophiam apud illam scientiam dividamus, et consideremus sub qua ipsius partium contineatur res. **Philosophia igitur dividitur in scientiam et operationem. Et illud iterum ideo quoniam anima dividitur in duas partes, quae sunt cogitatio vel ratio et sensus, quemadmodum ostendimus in libro *Categoriarum*. Quia igitur philosophia non est nisi ordo animae**, conveniens est ei ut **dividatur in duas partes, sicut anima in duas partes dividitur.** Sicut enim anima dividitur **in cogitationem [vel rationem] et sensum**, et similiter dividitur philosophia in scientiam et operationem, **ut scientia videatur pars cogitativa et operatio pars sensibilis’.**⁴⁰

dedicatory of the *De differentia animae et spiritus*: thus, it seems quite improbable that Gundissalinus had access to a corrupted variant of the manuscript tradition.

³⁹ Dominicus Gundissalinus, *De divisione philosophiae*, ed. Baur, pp. 141,24-142,6

⁴⁰ Al-Kindī, *De quinque essentiis*, ed. Nagy, *Beiträge zur Geschichte der Philosophie und Theologie des Mittelalters* 2/5, Münster: Aschendorff, 1897, pp. 28-40 (p. 28,1-16).

Both texts report that Aristotle stated that philosophy is ‘*omnis rei scientia*’, and divided into two parts, *scientia* and *operatio*, following the twofold division of the soul into *ratio* and *sensus*. The science is grasped by the cogitative part of the soul, while the operation/experience by the sensible part. All the same, both al-Kindī and Gundissalinus state that philosophy ‘*non est nisi ordo animae*’, although in the case of Gundissalinus this assertion is anticipated in the text. The two excerpts are extremely close from a lexical and syntactical point of view, and the slight changes in Gundissalinus’s version are again most convincingly to be ascribed to his willingness to harmonise his quotations in his writing.

The fact that Gundissalinus is here using al-Kindī’s *De quinque essentiis* is important, for it reveals that Gundissalinus had access to a translation made by Gerard, used it, in the elaboration of his own original philosophical writings. This suggestion is strengthened by consideration of a further occurrence of Aristotle’s name in the *De divisione philosophiae*, namely in the discussion of political science. There, Gundissalinus names Aristotle as the author of *Politics*, the reference-book of that science:

[F.] Et haec quidem scientia continetur **in libro Aristotelis, qui *Politica* dicitur**, et est pars *Ethicae*. In quo etiam docet, quas condiciones et dispositiones naturales oportet observare in filiis regum et in aliis ad hoc, ut ille, in quo inventae fuerint, eligatur ad regnum, deinde illum, in quo fuerint, qualiter oportet morigerari, quousque perficiatur in eo virtus regia et fiat rex perfectus’.⁴¹

As is common when Gundissalinus expounds the articulation of a single discipline through the works written and dedicated to that discipline by Aristotle, his source is al-Fārābī’s *Kitāb Iḥṣā’ al-’Ulūm*, which Gundissalinus ‘creatively’ translated into Latin. This case is no exception, and the whole excerpt of the *De divisione* is nothing but a quotation from Gundissalinus’s version of the *De scientiis*:

‘Et hec quidem scientia continetur in libro qui *Politica* dicitur. Et est pars *Ethice*. In quo etiam docet quas condiciones et dispositiones naturales oportet observare in filiis regum et in aliis ad hoc, ut ille in quo invente fuerint, eligatur ad regnum. Deinde illum in quo fuerint, qualiter oportet morigerari, quousque perficiatur in eo virtus regia, et fiat rex perfectus’.⁴²

⁴¹ Gundisalvi, *De divisione philosophiae*, ed. Baur, p. 136,8-13.

⁴² Dominicus Gundissalinus, *De scientiis*, ed. Alonso Alonso, Madrid - Granada: CSIC, 1954, pp. 138,13-139,6.

The two texts are strikingly coincident, lexically and syntactically, and there is no doubt that the passage of the *De divisione* is dependent on that of the *De scientiis*. Nonetheless, there is one, subtle, difference between these passages: the *De divisione* mentions Aristotle as the author of the *Politics*. This might well be an addition made by Gundissalinus, who presumably knew that Aristotle was the author of that work, even if he did not mention it in his *De scientiis*. All the same, it should be recalled Gerard also made a Latin translation of al-Fārābī's *Iḥṣā' al-'Ulūm* in which the following passage occurs:

'Et hoc quidem est in libro qui *Politica* dicitur, et est liber *Ethice Aristotilis*. Et est iterum in libro *Ethice* Platonis. Et in libris Platonis et aliorum. Deinde demonstrat quod ille operationes, et consuetudines, et habitus, omnes sunt sicut egritudines civitatibus bonis. Sed operationes que appropriantur virtutibus regis ex eis, et consuetudines earum, sunt sicut egritudines virtutis regie bone'.⁴³

The excerpt from Gundissalinus is quite different from that of Gerard, much more literal and detailed. Among those details there is also a specific mention of Aristotle as the author of the *Ethics*, one of the parts of which was supposedly the *Politics*. Gerard's translation also reports Plato's and other philosophers' writings on the issue, something to which Gundissalinus makes no reference either in his *De scientiis* or in the *De divisione*. Regarding this occurrence of Aristotle's name in Gundissalinus's *De divisione*, it is almost impossible to affirm whether Gundissalinus inserted it following al-Fārābī's original text or not.

Gundissalinus does, on occasion, insert direct references to Aristotle even when there is no trace of him in the source he, Gundissalinus, is quoting. A remarkable example of this tendency is offered by a brief passage from Gundissalinus's *De anima*, IV, where he asserts:

'[G.] **Ex his igitur manifestum est quod cum nec vita nec una perfectionum sive bonitatum retenta sit apud primum principium in prima genitura, sicut Aristoteles dixit**, tamen non omne corpus est receptibile vitae quia caret aptitudine recipiendi eam'.⁴⁴

Aristotle is here supposed to claim that even if neither life nor any of the first perfections or goods are retained in the first principle in the first generation of

⁴³ Al-Fārābī, *De scientiis* (tr. Gerardo), ed. Schupp, Hamburg: Felix Meiner Verlag, 2005, pp. 118,21-119,2. I have to thank Charles Burnett for signalling that the use of 'egritudo' ('illness') for 'cause' arises from the fact that the Arabic word 'illa means both cause and 'illness'.

⁴⁴ Dominicus Gundissalinus, *De anima*, p. 116,9-13.

things, nonetheless not every corporeal body can receive life if it lacks the capacity to receive it. There is no need to point out how far this passage is from Aristotelian doctrine, and indeed it does not derive from Aristotle's works but from Avicenna's *De medicina cordialibus*, translated by Gundissalinus:

'Nec vita nec ulla perfectionum aut bonitatum est retenta apud primum principium in prima genitura, sed receptibilia quandoque sunt carentia aptitudine recipiendi ea: non enim omne receptibile est receptibile omnis rei, et ideo impossibile est lanam recipere formam ensis, ipsa existens lana, nec aquam veritatem humanitatis, ipsa existens aqua'.⁴⁵

The first part of the two sentences is the same in both cases: Gundissalinus quotes the text of the *De medicina cordialibus* and adds the name of Aristotle as the authority, knowing full well that the origin of the passage was Avicenna rather than Aristotle.⁴⁶ The second part of the sentence is different from Avicenna's, although it can be seen as a drastic synthesis by Gundissalinus of the theme with which Avicenna deals in the subsequent pages of the *De medicina cordialibus*. It is nonetheless very interesting that Gundissalinus added Aristotle's name while quoting Avicenna's text, and this fact is probably due to the implicit coherence Gundissalinus assumed there to be between the opinions of these two authors.

Another occurrence of Aristotle in the *De divisione philosophiae* is directly connected to Gundissalinus's Arabic sources with some intriguing peculiarities. It appears in the discussion of the *ordo legendi* of logic presented by the Toledan philosopher in a long passage that is worth analysing in detail:

'[H.] Post rethoricam ergo legenda est logica, set hoc ordine: nam quia officium logice est dividere, diffinire et probare, probacio vero non fit, nisi sillogismo, sillogismus vero constat ex propositionibus, propositiones ex terminis, termini vero sunt dictiones, significantes aliquem simplicem intellectum, prius autem oportet cognoscere simplicia quam composita ab eis: ideo in ordine logice sciencia terminorum naturaliter prima est, que in **libro Cathegoriarum** docetur. Ideo ipse liber primo legendus proponitur, in quo simplicium vocabulorum, qui sunt termini simplicium enunciacionum, plene doctrina traditur. Set **quia ad intelligenciam predicamentorum Porphyrii liber introductorius est, ideo ante predicamenta legendus est.** Set quia post cognitionem terminorum restat scire, quomodo ex eis fiat

⁴⁵ Avicenna, *De medicina cordialibus*, ed. Van Riet, in Avicenna Latinus, *De anima seu sextus de naturalibus*, IV-V, ed. S. Van Riet, Louvain - Leiden: Brill, 1968, p. 188,9-14.

⁴⁶ The critical editor of the Latin text of *De medicina cordialibus*, S. Van Riet, explains this passage as due to 'une confusion entre Avicenne et Aristote'. Actually, the pattern seems quite different and more complex, see p. 188.

composicio proposicionum, **ideo post predicamenta liber Periermenias statim legendus occurrit**. In quo docetur, qualiter ex terminis simplex enunciatio constituitur. Sed quia postquam ex terminis propositiones componere discimus, oportet, ut ex eis syllogismum secundum modum et figuram componamus, ideo **post Peri hermenias Priores analyticos legere debemus**, in quibus qualiter syllogismus ex propositionibus componitur docemur. Sed quia syllogismus habet tres species, scilicet dialecticum, demonstrativum, sophisticum, ideo **propter dialecticum syllogismum Topica et propter demonstrativum Posteriores analytici et propter sophisticum legi videntur Elenchi**. Hoc ordine docendam et discendam esse logicam, eius auctor docuit Aristoteles'.⁴⁷

In this text, Gundissalinus explains the order in which the logical works by Aristotle should be read. In this sense it comes as no surprise to find his name explicitly mentioned as the author of those works. The order presented by Gundissalinus is nonetheless quite peculiar. The first work to be read is Porphyry's *Isagoge* as an introduction to Aristotle's *Categoriae*. Then the *De interpretatione*, followed by the *Analytica priora*, the *Topica*, the *Analytica posteriora*, and finally the *De sophisticis elenchis*. It should be noted that the two other works usually presented in this context, Aristotle's *Rhetorica* and *Poetica*, are not mentioned here by Gundissalinus for he has dealt with them in the previous lines of this chapter. The particularity of Gundissalinus's *ordo legendi* is that he put the *Topics* between the *Prior* and *Posterior Analytici*: a choice that is extremely interesting as well as peculiar, as will be shown below.

The *Kitāb Iḥṣā' al-'Ulūm* by al-Fārābī is the source of similar passages in the *De divisione philosophiae*, but here the *ordo legendi* proposed by Gundissalinus is different (in both Gundissalinus's nor in Gerard's versions of al-Fārābī). In Gundissalinus's *De scientiis*,⁴⁸ indeed, the Toledan philosopher shortens the original text

⁴⁷ Dominicus Gundissalinus, *De divisione philosophiae*, ed. Baur, pp. 82,8-83,6

⁴⁸ Dominicus Gundissalinus, *De scientiis*, ed. Alonso Alonso, pp. 77,14-79,11: 'Sed, quia veritatis certa cognitio non habetur, nisi per demonstrationem, ideo necessarium fuit librum componi, qui doceret qual iter et ex quibus demonstratio fieret. Et ob hoc compositus est liber qui *Posteriora Analytica*, sive *Liber demonstrationis*, dicitur. – Sed, quia demonstratio non fit nisi per syllogismus, syllogismus vero constat ex propositionibus, idcirco fuit necessario liber in quo doceretur ex quot et qualibus propositionibus, et qualiter secundum modo set figuras, syllogismus contexeretur. Et propter hoc facta sunt *Analytica Priora*. – Sed quia propositiones syllogismum componere non possunt nisi ipse prius a suis terminis componantur, idcirco necessarius fuit liber qui doceret ex quibus et ex quot terminis propositio consisteret. Quod quidem plene docetur in libro qui dicitur *Liber perihermenias*. – Sed, quia propositio ex terminis numquam bene componitur, nisi prius significatio cuiusque termini cognoscatur, ideo institutus est *Liber cathegoriarum* ad docendum quot sunt genera termi-

by al-Fārābī, and presents the logical works in a descending order that counts only four Aristotelian writings: *Analytica posteriora*, *Analytica priora*, *De interpretatione*, *Categoriae*, with no trace of Porphyry's *Isagoge*. After that, Gundissalinus mentions the eight parts of which the logic is composed, and that take their names from Aristotle's writings: *Categoriae*, *Perihermenias*, *Analytica Priora*, *Analytica Posteriora*, *Topica*, *Sophistica*, *Rhetorica*, *Poetica*, where rhetoric and poetics again appear as parts of the logical science. On the contrary, Gerard's version of the *De scientiis* includes a more detailed discussion.⁴⁹ There, eight books are

norum et que sit significatio cuiusque eorum. **Octo quidem sunt partes Logice: Categoriae, Perihermenias, Analytica Priora, Analytica Posteriora, Topica, Sophistica, Rhetorica, Poetica**’.

⁴⁹ Al-Fārābī, *De scientiis*, ed. Schupp, pp. 54,14-58,13: ‘Fiunt **ergo partes dialectice necessario octo**, quarum unaqueque pars est in libro. In primo quidem sunt regule simplicium ex rationis et dictionibus significantibus ea. Et sunt in libro nominato arabice quidem *almaculet*, et grece *categoriae*. Et in secundo sunt regule sermonum simplicium, rationatorum qui sunt compositi ex duobus sermonibus simplicibus, et dictionum significantium ea compositarum ex duobus dictionibus, et sunt in libro nominato arabice quidem *alhibar* interpretatio, et grece *pergermenias*. Et in tertio sunt sermones quibus experiuntur sillogismi communes artibus quinque. Et sunt in libro nominato arabice quidem *sillogismi*, et grece *analetica prima*. Et in quarto sunt regule quibus experiuntur sermones demonstrativi, et regule rerum quibus componitur phylosophia, et totum quo fiunt operationes magis complete, et melius, et perfectius. Et est arabice *liber demonstrationis*, et grece *analetica secunda*. Et in quinto sunt regule quibus experiuntur sermones topici, et qualiter est questio topica, et responsio topica, et ad summum regule rerum quibus componitur ars topica, et quibus fiunt operationes eius melius et perfectius et penetrabilibus. Et est arabice *liber locorum topicorum*, et grece *topica*. Et in sexto imprimis sunt regule rerum quarum proprietas est ut errare faciant a veritate, et occultent, et hesitare faciant, et comprehendunt omnium rerum quibus utitur ille cuius intentio est decipere et fraudare in scientiis, et sermonibus. Deinde post ista comprehensio eius quo oportet obviari sermonibus errare facientibus quibus utitur iactor et deceptor, et qualiter destruantur, et quibus rebus expellantur, et qualiter sibi caveat homo ab hoc ut erret in questione sua, aut errare faciat. Et iste liber nominatur, grece *sophistica*. Et eius intentio sapientia deceptrix. Et in septimo quidem sunt regule quibus experiuntur et quibus probantur sermones rethorici, et species prosarum, et sermones bene loquentis, et rethorici, et faciunt scire an sint secundum intentionem rethorice, aut non, et comprehenduntur omnes res quibus componitur ars rethorice, et docet qualiter sit ars sermonum rethoricum, et prosarum, in unoquoque tractatu rerum, et quibus rebus fiant meliores et perfectiores, et sint eorum operationes penetrabiliores, et magis ultime. Et iste liber, nominatur grece *rethorica*, et est arabice *alchatabati*. Et in octavo sunt regule quibus experiuntur versus, et species sermonum metricorum facti et illi qui fiunt in unoquoque tractatu rerum, et comprehendit omnes res quibus completur ars versuum, et quot sint species eius, et quot sint species versuum et sermonum metricorum, et qualiter sit ars omnis speciei eorum, et in quibus rebus fiant, et quibus rebus componatur, et fiant melius, et sublimius, et manifestius, et delectabilius, et cum quibus oportet ut sint donec fiant magis ultimi et penetrabiliores. Et iste liber nominatur grece *sumica*, et est *liber versuum*’.

counted in ascending order: *Categoriae*, *Perihermenias*, *Analytica Priora*, *Analytica Posteriora*, *Topica*, *Sophistica*, *Rhetorica*, *Poetica/Sumica*, which correspond to the eight parts Gundissalinus affirms that compose logic. In both cases, Porphyry's *Isagoge* is not taken into account, and the *Prior Analytics* are followed directly by the *Posterior Analytics*, and then by the *Topics*.

The eight parts of which logic science is composed, according to al-Fārābī, are not ignored by Gundissalinus in the *De divisione*. On the contrary, it is curious to observe that he discusses and ascribes this division directly to al-Fārābī, stating that: 'secundum Alfarabium octo sunt partes logice: cathegorie, perhiermenias, analetica priora, analetica posteriora, thopica, sophistica, rethorica, poetica. Nomina autem librorum ponuntur pro nominibus scientiarum, que continentur in illis'.⁵⁰ This order follows that found in both versions of al-Fārābī's *Iḥṣā' al-'Ulūm*. Moreover, the following pages of the *De divisione* follow this articulation of logic, presenting and discussing its eight parts until the very end of the chapter dedicated to logic, where Gundissalinus nonetheless expounds the aforementioned *ordo legendi*.

The explicit quotation of al-Fārābī as the proponent of the eightfold articulation of logic, and the abrupt change on the quoted logical writings at the end of the chapter, suggest that Gundissalinus makes use of another source, in addition to al-Fārābī. While the origin of the insertion of the *Topics* between the *Prior* and *Posterior Analytics* is difficult to trace, the addition of the *Isagoge* to the *ordo legendi* is probably the result of a tension between the scientific articulations proposed by al-Fārābī and Avicenna. The latter, in his *De divisione scientiarum*, translated into Latin more than three centuries after Gundissalinus by Andrea Alago but whose original Arabic text was supposedly available in Toledo, presents logic as formed of nine parts, the first one of which is focused on Porphyry's *Isagoge*: 'Partes logice, que est organum scientiarum, sunt novem. In parte enim prima manifestantur dictiones, et intentiones secundum quod sunt universales simplices: et hanc partem comprehendit liber Ysagoge a Porphirio compositus'.⁵¹ Avicenna's *ordo legendi* then follows al-Fārābī's, but not Gundissalinus's *De divisione*, for the placing of the *Posterior Analytics* after the *Topics*:

⁵⁰ Dominicus Gundissalinus, *De divisione philosophiae*, p. 71,16-20.

⁵¹ Avicenna, *De divisione scientiarum* (tr. Alago), Venezia: Apud Iuntas, 1546, p. 144.

Gundissalinus, <i>De div. ph.</i>	al-Fārābī, <i>De scientiis</i> (Gerardus)	al-Fārābī, <i>De scientiis</i> (Gundissalinus)	Avicenna, <i>De div. sc.</i>
<i>Isagoge</i> <i>Categoriae</i> <i>De interpretatione Analytica priora</i> <i>Topica Analytica posteriora</i> <i>De sophisticis elechis</i> [<i>Rhetorica</i> + <i>Poetica</i>]	<i>Categoriae</i> <i>De interpretatione Analytica priora</i> <i>Analytica posteriora</i> <i>Topica</i> <i>De sophisticis elechis</i> <i>Rhetorica</i> <i>Poetica/Sumica</i>	<i>Categoriae</i> <i>De interpretatione Analytica priora</i> <i>Analytica posteriora</i>	<i>Isagoge</i> <i>Categoriae</i> <i>De interpretatione Analytica priora</i> <i>Analytica posteriora</i> <i>Topica</i> <i>De sophisticis elechis</i> <i>Rhetorica</i> <i>Poetica</i>

Avicenna's influence on Gundissalinus is profound, and in the *De divisione philosophiae* the Toledan philosopher quotes a large excerpt precisely from Avicenna's *Logics* from the *Liber sufficientiae*, under the title *Summa Avicennae de convenientia et differentia subiectorum*.⁵² As for the insertion of the *Isagoge* among the order of readings of logic, the most probable option seems that Gundissalinus was influenced by Avicenna's articulation of the logical science, through the *Logica* or further Avicennian writings available in Toledo at the time, a question that evidently transcends the present analysis, but that is of the utmost importance to understand Gundissalinus's and Gerard's *milieu*.

Finally, three further occurrences of Aristotle's name in Gundissalinus's works deal with a specific issue of Aristotelian derivation: the epistemic principle according to which a science cannot demonstrate the principles upon which it is based. These three occurrences are presented in the *De divisione philosophiae*, in quite different contexts, even though they are based on the same sentence quoted by Gundissalinus. The first excerpt is taken from the discussion of logical science in the *De divisione*:

'[1.] **Dicente enim Aristotele in *Analyticis*, nulla scientia probat materiam suam;** sed logica probat omnem thesim; thesis igitur non est materia eius'.⁵³

Gundissalinus states that no science can prove its own subject matter, an assertion whose meaning is clarified by the conclusion of the sentence, where Gundissalinus specifies that, for this reason, the arguments do not constitute the subject

⁵² Dominicus Gundissalinus, *De divisione philosophiae*, pp. 124,5-133,27.

⁵³ Dominicus Gundissalinus, *De divisione philosophiae*, p. 71,4-6.

with which logic deals, since the purpose of this discipline is exactly to prove their validity. Aristotle's name is here mentioned in relation to his *Analytics*, the treatise in which he asserted this epistemological principle Gundissalinus claims. The second passage is part of Gundissalinus's treatment of divine science:

[J.] **Teste enim Aristotele nulla scientia inquit materiam suam**; sed in hac scientia inquitur, an sit Deus. **Ergo Deus non est materia eius. Similiter de causis.**⁵⁴

Again, the problem presented by Gundissalinus is the relation between a science and its subject matter, in this case that constituting the subject of study of metaphysics. Since no science can prove its own subject matter, and divine science enquires into the existence of God, God cannot be its matter, nor can the causes be its subject matter. The third and final text derives from the chapter on arithmetic of the *De divisione philosophiae*

[K.] **Materia eius est numerus, quia de accidentibus eius tractat. Quamvis enim arithmetica dicatur esse scientia de numero, ipsa tamen non tractat de ipsa essentia numeri. Nullius enim scientiae est stabilire materiam suam, ut ait Aristoteles**, sed ipsa assignat proprietates eius et ea, quae accidunt ei sive ex se, sive ex commixtione materiae. **Alterius vero scientiae est tractare de ipsa essentia numeri, scilicet divinae, cuius est probare principia omnium scientiarum.**⁵⁵

The matter of arithmetic is the number, since that science deals with the accidents of numbers, and even though arithmetic is said to be the science of number, it does not deal with their essence, for no science can establish its subject matter but only study its properties and accidents. Indeed, the essence of number is treated by divine science, whose purpose is to prove the principles of every science. Also in this third case, then, the name of Aristotle seems to be implicitly connected to the *Analytics*, since the principle expounded here is the same as in the two previous cases, the first of which mentioned explicitly to the work by Aristotle.

Gundissalinus's reference to the *Analytics* is correct. In the *Posterior Analytics*, translated into Latin by Gerard of Cremona, Aristotle exposit his epistemology of science grounded on the theory of apodeictic syllogism and on the preliminary assumptions on which science is rooted. From this point of view, Aristotle states that every science in the first place has to assume the existence and truth of its axioms, premises and proper principles, upon which the science itself is based

⁵⁴ Dominicus Gundissalinus, *De divisione philosophiae*, pp. 36,21-37,2.

⁵⁵ Dominicus Gundissalinus, *De divisione philosophiae*, p. 92,5-12.

and whose consequences and accidents are investigated by that science within the limits of the genus.⁵⁶ No science, then, can demonstrate the existence of its objects, but their existence has to be assumed, as is number in the case of arithmetic:

‘Et de rebus propriis demonstrationi est subiectum, et est illud cuius esse concedere de aptitudine demonstrationis et ostendere res essentielles ei, sicut unitas in arismetica et punctum in geometria. Et demonstratio ponit hec duo secundum quod ipsa sunt; vestigia vero essentialia, quorum esse ostendit demonstratio, demonstratio considerat de re eorum secundum quod eorum nomina significant’.⁵⁷

Every science, therefore, deals with three things: ‘scilicet re que demonstratur, et re super quam cadit demonstratio, et re ex qua est demonstratio’, that is, the genus/subject on which the demonstration is based, its determinations that will be demonstrated, and the axioms and propositions through which they will be demonstrated.⁵⁸

Gundissalinus’s claim that Aristotle affirmed in his *Analytics* that no science is allowed to demonstrate its own subject is then true. Moreover, he uses this assertion in order to distance himself from the Boethian and Chartrian tradition, as Alexander Fidora has pointed out.⁵⁹ Nonetheless, the question remains as to whether Aristotle’s *Posterior Analytics* is the direct source Gundissalinus used in his *De divisione philosophiae*. The explicit reference to a specific work by Aristotle, potentially available to Gundissalinus while he was writing the *De divisione*, seems to suggest that he had direct access to Gerard’s translation. At the same time, however, comparison between the three passages suggests it is likely that Gundissalinus was using a text where the sentence ‘any science cannot prove its own matter’ was clearly formulated, since he repeats this phrase in all the cases analysed above. If this is true, that source cannot be Aristotle’s *Posterior Analytics*, for it contains no such an explicit statement of that epistemological principle. Moreover, that Gundissalinus quotes this passage, but in three slightly different versions, should be recalled:

⁵⁶ This issue is particularly developed by Aristotle in *Posterior Analytics* I, 2 and 10.

⁵⁷ Aristoteles Latinus, *Analytica posteriora* I, 10, 76b1-10, ed. L. Minio Paluella, Bruges - Paris: Desclée de Brouwer, 1954, p. 22,23-29.

⁵⁸ Aristoteles Latinus, *Analytica posteriora* I, 10, 76b20-30, p 23,18-21.

⁵⁹ A. Fidora, ‘Dominicus Gundissalinus and the Introduction of Metaphysics into the Latin West’, *Review of Metaphysics* 66/4 (2013), pp. 691-712, (pp. 700-703).

- [I.] nulla scientia probat materiam suam;
 [J.] nulla scientia inquit materiam suam;
 [K.] nullius enim scientiae est stabilire materiam suam.

It could be the case, then, that Gundissalinus is here using an Arabic source, which he quotes in an inpromptu translation without relying on a previous Latin version, or, simply, that he is adapting the quotation to the overall doctrinal context into which it is inserted. If not Aristotle, the best candidate to be the direct source for Gundissalinus's discussion of this theory is Avicenna. It is well known that Avicenna developed Aristotle's epistemology considerably, and concretised the principles exposed in the *Posterior Analytics* in an overall theory of knowledge providing an articulation of sciences based on the principle of subalternation.⁶⁰ Gundissalinus surely had access to that theory, since it is clearly presented in Avicenna's *Liber de philosophia prima*, which he, Gundissalinus, had translated. At the beginning of the metaphysical part of the *Liber sufficientiae*, following Aristotle, Avicenna states:

'De eo autem inquisitio fit duobus modis. Unus est quo inquitur an sit, alius est quo inquiruntur eius proprietates; postquam autem inquitur in hac scientia an sit, tunc non potest esse subiectum huius scientie. **Nulla enim scientiarum debet stabilire esse suum subiectum**.'⁶¹

The assertion that 'nulla enim scientiarum debet stabilire esse suum subiectum' is quite close to Gundissalinus's 'nullius enim scientiae est stabilire materiam suam', even if in the latter there is no explicit mention of the ontological sense implicit to the principle itself. The meaning of the two phrases is therefore the same, and constitutes a synthesis of Aristotle's theory. Nonetheless, the differences between the three variants of the same sentence do not find an explanation by deriving this passage from Avicenna's *Liber de philosophia prima*. Some more light can be cast from the consideration of the Arabic original of Avicenna's sentence, that reads: 'fa'inahu laysa 'ala 'ilmin min al-'ulūmi 'ithbātu mawḍū'ihī',⁶² translated into English by Michael Marmura as 'for it is not for any science to establish its own subject matter'.⁶³ The meaning of the Arabic verb

⁶⁰ See M. Maroth, 'Das System der Wissenschaften bei Ibn Sina', in *Avicenna/Ibn Sina*, II, ed. B. Brentjes, Halle - Wittenberg: M. Luther Universität, 1980, pp. 27-34.

⁶¹ Avicenna, *Liber de philosophia prima*, I, ed. Van Riet, Louvain - Leiden: Brill, 1977, p. 5,82-85.

⁶² Avicenna, *al-Ilāhiyya*, I, 12, ed. G.C. Anawati, S. Zayed, M. Musa and S. Dunya, Cairo: al-Hay'a al-'amma li šu'un al-maṭabi' al-amiriyya, 1960.

⁶³ Avicenna, *The Metaphysics of the Healing*, English translation by M.E. Marmura, Provo: Brigham Young University Press, 2005, p. 4,21-22.

tabata contains both the Latin rendering *stabilio* (to establish) and *probo* (to prove), as well as the Arabic term *mawḍūʿ* can be properly translated into Latin as both *subiectum* and *materia* in the sense of subject matter.⁶⁴ Taking this into consideration the most probable circumstance is that Gundissalinus derived the quoted text directly from the Arabic text of Avicenna's *Liber de philosophia prima*, rather than from his Latin translation of the same text, since at least two of the three variations of the epistemic principle found in the *De divisione* are extremely close to Avicenna's Arabic lexically and syntactically.

That Avicenna is the source of Gundissalinus is confirmed by further remarks. Gundissalinus quotes the assertion on the principles of science in three discussions, on logic, metaphysics, and arithmetic, respectively. Regarding metaphysics, Gundissalinus claims that God cannot be the subject of divine science for this science investigates his existence, and in a similar fashion neither can the causes be the subject of metaphysics. In the *Liber de philosophia prima*, I, Avicenna deals with a very similar problem. In the preliminary discussion of the subject of divine science, the Persian philosopher takes into account the possibility that God is the subject of this disciplines:

‘Constat autem quod omnis scientia habet subiectum suum proprium. **Inquiramus ergo quid sit subiectum huius scientiae, et consideremus an subiectum huius scientiae sit ipse Deus excelsus**; sed non est, immo est ipse unum de his quae quaeruntur in hac scientia. Dico igitur impossibile esse ut ipse Deus sit subiectum huius scientiae, quoniam subiectum omnis scientiae est res quae conceditur esse, et ipsa scientia non inquit nisi dispositiones illius subiecti, et hoc notum est ex aliis locis. Sed **non potest concedi quod Deus sit in hac scientia ut subiectum**, immo est quaesitum in ea, scilicet quoniam, si ita non est, tunc non potest esse quin sit vel concessum in hac scientia et quaesitum in alia, vel concessum in ista et non quaesitum in alia’.⁶⁵

It is impossible that God is the subject of divine science since the existence of the subject matter of every science has to be assumed rather than being demonstrated or its existence investigated. And since metaphysics deals precisely with the existence of God, the latter cannot be its subject.

It is worth noting that a few lines after this excerpt, Avicenna considers another possibility: that the subject of divine science could be the first causes. And he claims:

⁶⁴ I have to express my most sincere gratitude to Lucas Oro for the precious help in clarifying the Arabic passage from Avicenna's *al-Ilāhiyya*.

⁶⁵ Avicenna, *The Metaphysics of the Healing*, p. 4,57-68.

‘Postquam autem necesse est ut haec scientia subiectum habeat, et monstratum est illud quod putabatur esse subiectum eius non esse suum subiectum, tunc quaeramus an subiectum eius sint ultimae causae eorum quae sunt [...] Dico autem quod, si bene consideretur, **non possunt esse subiectum huius scientiae inquantum sunt causae absolutae, ita ut intentio huius scientiae sit considerare ea quae accidunt causis inquantum sunt causae absolutae**’.⁶⁶

In this case too, the answer cannot be but negative: the subject of metaphysics cannot be provided by the ‘causae absolutae’, but it will rather be what is affected by the causality of these causes. The recognition of both the developments that neither God nor the causes can be the subject of divine science in the excerpt [J.] of Gundissalinus’s *De divisione philosophiae* suggests strongly that Avicenna was the source of this passage. The meagre references to God and especially the causes (‘Ergo Deus non est materia eius. Similiter de causis’) indicate that Gundissalinus was referring to a source with which he was confident, and that source was Avicenna’s *Liber de philosophia prima*.

Some similar remarks can be made regarding the third [K.] of Gundissalinus’s excerpts, stating that the existence of numbers is not to be dealt with by arithmetic. In the *Liber de philosophia prima*, I, Avicenna discusses arithmetic in various ways, and its subjects are identified as measure and number.⁶⁷ All the same, Avicenna clearly points out that the existence of measures and numbers cannot be investigated by the *scientia disciplinalis*, whose principles are investigated by divine science:

‘Tam etiam audisti quod scientia divina est in qua quaerunt de primis causis naturalis esse et doctrinalis esse et de eo quod pendet ex his, et de causa causarum et de principio principiorum, quod est Deus excelsus’.⁶⁸

⁶⁶ Avicenna, *The Metaphysics of the Healing*, p. 6,97-11.

⁶⁷ Avicenna, *The Metaphysics of the Healing*, pp. 9,64-10,72: ‘Subiectum vero scientiae doctrinalis est mensura, sive intellecta absque materia sive intellecta in materia, et numerus, sive intellecta absque materia sive intellectus in materia. Non enim inquit stabilire an mensura vel numerus intelligatur absque materia vel in materia, sed consideratio de his est de dispositionibus eorum quae accidunt eis post positionem eorum huiusmodi. Scientiae vero quae sunt sub disciplinalibus, convenientius est ut non considerent nisi de accidentalibus consequentibus posita, quae sunt minus communia quam ipsa posita’.

⁶⁸ Avicenna, *The Metaphysics of the Healing*, pp. 2,31-3,3, see also p. 9,64-86: ‘Deinde consideratio de substantia inquantum est ens vel est substantia, vel de corpore inquantum est substantia, et **de mensura et numero inquantum habent esse et quomodo habent esse**, et de rebus formalibus quae non sunt in materia, vel, si sint in materia, non tamen corporea, et quomodo sunt illae, et quis modus est magis proprius illis, separatim per se debet haberi.

Among the prerogatives and purposes of divine science there is, therefore, an evaluation of the correctness of the principles of the subsequent sciences, beginning with physics and mathematics, that is, the other two theoretical sciences that precede metaphysics in the hierarchical order of knowledge:

‘[...] utilitas igitur huius scientiae, cuius modum iam demonstravimus, est profectus certitudinis principiorum scientiarum particularium, et certitudo eorum quae sunt eis communia quid sint, quamvis illa non sint principia causalia’.⁶⁹

This passage clarifies the assertion made by Gundissalinus that divine science rather than arithmetic has to deal with the essence of numbers (‘alterius vero scientiae est tractare de ipsa essentia numeri, scilicet divinae, cuius est probare principia omnium scientiarum’).⁷⁰ The primary source of this doctrine is indeed Avicenna, who appears to exercise profound influence over Gundissalinus’s references to Aristotle. The source of Gundissalinus’s discussion of the epistemic principle by which no science can demonstrate its own subject matter seems, in conclusion, to have been derived from Avicenna. The three occurrences of Aristotle’s name presented in that context also seem to be based on Avicennian material into which Gundissalinus inserted a direct reference to Aristotle. This does not mean that Gundissalinus had no access to the *Posterior Analytics*: on the contrary, Gundissalinus explicitly refers in one occasion to that work and is aware that Aristotle discusses there his theory on the principles of science. Nevertheless, the *Liber de philosophia prima* seems to show a stronger and wider influence from Avicenna rather than Aristotle on this issue. More generally, the role played in Gundissalinus’s knowledge of Aristotle by the Arabic philosophical writings is a crucial issue to investigate, since on a significant number of occasions the Toleman philosopher quotes Aristotle’s name through the mediation of ‘the Arabs’, both in his, Gerard’s, or others’ translations.

Gundissalinus, Aristotle and Gerard of Cremona

In the prologue of the *De divisione philosophiae*, Gundissalinus refers to Aristotle as the proponent of the threefold distinction of theoretical philosophy in physics, mathematics, and divine science:

Non enim potest esse subiectum alicuius scientiarum de sensibilibus nec alicuius scientiarum de eo quod habet esse in sensibilibus’.

⁶⁹ *Idem*, p. 20,67-70.

⁷⁰ Dominicus Gundissalinus, *De divisione philosophiae*, ed. Baur, p. 92,10-12

[L.] Et hae tres tantum scientiae sunt partes philosophiae theoriae, eo quod non possunt esse plus genera rerum quam haec tria, de quibus posset fieri speculatio. **Unde Aristoteles: Ideo scientiarum sunt species tres, quoniam una speculatur, quod movetur et corrumpitur ut naturalis; et secunda, quod movetur et non corrumpitur ut disciplinalis; tertia considerat, quod nec movetur nec corrumpitur ut divina.**⁷¹

Theoretical philosophy is composed of three sciences which are individually distinguished through the different ontological status of their subject: 1) natural philosophy, whose objects of study have movement and suffer corruption; 2) mathematics, which deals with those beings that are in movement but are not corruptible; and 3) divine science, whose objects are not in movement nor subject to corruption. The origin of this division is indeed Aristotle, who, in *Metaphysics*, VI, 1, 1025b19-1026a33, presents his distinction of theoretical philosophy in natural philosophy, mathematics, and theology: their subjects are distinguished through analysis of their movement and materiality. Aristotle notoriously claims that physics deals with material beings in movement, mathematics with beings deprived or abstracted from their materiality and without movement, and theology with those beings which have no matter nor movement.

It seems clear that Gundissalinus's reference to the corruption of these objects of theoretical sciences echoes Aristotle's position on materiality that, with movement, is the principal feature by which the scientific subjects can be distinguished. From an Aristotelian perspective, the materiality of a being, that is, its being corporeal, always implies its corruptibility. For Gundissalinus this is not the case, since he had accepted eagerly Ibn Gabirol's universal hylomorphism, by virtue of which every being apart from God is composed of matter and form, including the spiritual creatures who are in themselves not subject to ontological corruption. In this way, it could be the case that Gundissalinus's reference to corruption rather than to materiality in the discussion of the two ways through which the theoretical sciences can be distinguished follows an attempt to harmonize his metaphysical beliefs with Aristotelian gnoseology.

Nonetheless, there are at least two aspects that separate, in terms of doctrine, Gundissalinus's version of the division of theoretical sciences from Aristotle's. Gundissalinus does not spend any time on the abstractive process through which these objects are dealt with, and moreover, he affirms that the objects with which mathematics deals are incorruptible and in movement ('quod movetur et non corrumpitur ut disciplinalis'), while Aristotle claims that whether the objects of mathematics 'are immovable and separable from matter, is not at present clear; it

⁷¹ Dominicus Gundissalinus, *De divisione philosophiae*, p. 15,9-15.

is clear, however, that it considers some mathematical objects *qua* immovable and *qua* separable from matter'.⁷²

Second, it is worth recalling that Aristotle's *Metaphysics* was translated from Arabic only once; not by Gerard but by Michael Scot a few decades after Gundissalinus's death. By the time the Toledan philosopher wrote the *De divisione*, the *Metaphysics* was available through two partial versions, that made by James of Venice (the *translatio vetustissima*), and possibly the *translatio vetus*. The *translatio media* would be available only by the end of the century⁷³. Both the *translatio vetus* and the *vetustissima* cover the first four books of the *Metaphysics*, and therefore do not include Aristotle's discussion on the division of science expounded in the sixth book. For this reason, it is more probable for Gundissalinus to have had access to this doctrine through a third source. Alexander Fidora⁷⁴ and Henri Hugonnard-Roche⁷⁵ have identified this as Boethius. In fact, in his *De Trinitate*, Boethius summarises the Aristotelian articulation of theoretical philosophy as follows:

'Nam cum tres sint speculativae partes, **naturalis, in motu inabstracta**, *anupexairetos* (**considerat enim corporum formas cum materia**, quae a corporibus actu separari non possunt: **quae corpora in motu sunt**, ut cum terra deorsum ignis sursum fertur, habetque motum forma materiae coniuncta), **mathematica, sine motu inabstracta** (haec enim **formas corporum speculatur sine materia ac per hoc sine motu**: quae formae cum in materia sint, ab his separari non possunt), **theologica, sine motu abstracta atque separabilis** (**nam Dei substantia et materia et motu caret**): **in naturalibus igitur rationabiliter, in mathematicis disciplinaliter, in divinis intellectualiter uersari oportebit** neque diduci ad imaginationes, sed potius ipsam inspicere formam, quae vere forma neque imago est et quae esse ipsum est et ex qua esse est'.⁷⁶

Boethius's and Gundissalinus's passages are very close, and the link between them is even stronger lexically, since Gundissalinus uses the term *disciplinalis* to

⁷² Aristotle, *Metaphysics*, IV, 1, 126a14-15, English translation by W.D. Ross, Princeton: Princeton University Press, 1984, p. 85.

⁷³ M.-Th. D'Alverny, 'Translation and Translators', in *Reinassance and Renewal in the Twelfth Century*, ed. R. Benson and G. Constable, Cambridge: Cambridge University Press, 1982, pp. 426-433 (pp. 435-437).

⁷⁴ A. Fidora, *Domingo Gundisalvo y la teoría de la ciencia arábigo-aristotélica*.

⁷⁵ H. Hugonnard-Roche, 'La classification des sciences de Gundissalinus et l'influence d'Avicenne', in *Études sur Avicenne*, ed. J. Jolivet and R. Rashed, Paris: Vrin, 1984, pp. 41-75.

⁷⁶ Boethius, *De Trinitate*, II, ed. Moreschini, München - Leipzig: K. G. Saur Verlag, 2005, 168,68-169,83.

refer to mathematics. This is a popular term of Boethian origin used commonly in the twelfth century in direct relation to Boethius, especially at Chartres. All the same, one should also recall that Gundissalinus quotes Boethius's gnoseological discussion just a few lines before the aforementioned passage from the *De divisione philosophiae*,⁷⁷ as well as in the introductory part of his *De processione mundi*.⁷⁸ The latter, though, is through a longer quotation from Hermann of Carinthia's *De essentiis*.⁷⁹ Henri Hugonnard-Roche⁸⁰ has shown, however, that Gundissalinus's overall position regarding the division of theoretical science is dependent also on the treatment of the same feature offered by Avicenna⁸¹ and al-Ghazālī⁸², discussions of which Gundissalinus was surely aware since he was the translator of both the *Liber de philosophia prima* and al-Ghazālī's *Summa*. Through these writings, indeed, he corrects some of the consequences of Boethius's gnoseology.⁸³

⁷⁷ Dominicus Gundissalinus, *De divisione philosophiae*, p. 15,6-9: 'Et ob hoc dicit Boethius, quod physica est inabstracta et cum motu, mathematica abstracta et cum motu, theologia vero abstracta et sine motu'.

⁷⁸ Dominicus Gundissalinus, *De processione mundi*, p. 2,12-14: 'Unde dicitur, quod in naturalibus rationaliter, in mathematicis disciplinaliter, in theologicis intellectualiter versari oportet'.

⁷⁹ Hermann of Carinthia, *De Essentiis*, 72rH, p. 180,3-9: 'Videtur enim, ut Boetius distribuit, tripartitus omnis speculationis modus. Quod ut constet altius sumi oportet. Tripartita est omnis speculationis materia: in rerum compositione et dispositione causaque utrumque moderante. Compositio est causarum constituentium commixtio. Dispositio, commixtorum ordinata habitudo. Quarum coitus omnis corporee substantie constitutio et absolutio. Causa moderatrix tripartita: principalis, secundaria et tertiae dignitatis'.

⁸⁰ H. Hugonnard-Roche, 'La classification des sciences de Gundissalinus et l'influence d'Avicenne'

⁸¹ Avicenna, *Philosophia prima*, I, p. 2,20-30: 'Et diximus quod speculativae comprehenduntur **in tres partes**, in **naturales** scilicet et **doctrinales et divinas**; et quod suum **subiectum naturalium est corpora, secundum quod moventur et quiescunt**, et quod de eis inquiritur est accidentalia quae accidunt eis proprie secundum hunc modum; et quod suum **subiectum doctrinalium** est vel quod est quantitas pure, vel quod est habens quantitatem, et dispositiones eius quae inquiruntur in eis sunt ea quae accidunt quantitati ex hoc quod est quantitas, **in definitione quarum non invenitur species materiae nec virtus motus**; et quod **divinae scientiae non inquirunt nisi res separatas a materia secundum existentiam et definitionem**'.

⁸² Al-Ghazālī, *Summa theoriae philosophiae*, ed. J.T. Muckle, Toronto: St. Michael's College, 1933, p. 3,25-32: '**Scientia igitur que tantum tractat de his que sunt omnino extra materiam est theologia**. Que vero **tractat de his que possunt estimari extra materiam, sed non habent esse nisi in materia est mathematica**. Que vero **tractat de hisque non habent esse nisi in materiis signatis est naturalis**: hec igitur causa est quare hee scientie distribuntur in tria. **Speculatio igitur philosophie consistit in his tribus scienciis** et in illis tractatibus'.

⁸³ See H. Hugonnard-Roche, 'La classification des sciences de Gundissalinus et l'influence d'Avicenne', p. 47

Nevertheless, neither Boethius, nor Avicenna or al-Ghazālī present the object of mathematical sciences as in movement and incorruptible. Regarding this fact, Fidora has shown that the direct source of Gundissalinus could well be Aristotle’s *Physica*, II, 7, 198a29-31.⁸⁴ The *translatio vetus* by James of Venice, potentially available to Gundissalinus, displays a very different passage, far from Gundissalinus text, since it reads: ‘unde tria negotia sunt, hec quidem circa immobile, alia vero circa mobile quidem incorruptibile autem, quedam autem circa corruptibilia’.⁸⁵ By contrast, the comparison of Gundissalinus’s passage with Gerard’s translation is striking:

Gundissalinus, <i>De divisione philosophiae</i>	Aristotle, <i>De naturali auditu</i> (translatio Gerardi)
Unde Aristoteles: Ideo scientiarum sunt species tres , quoniam una speculatur , quod movetur et corrumpitur ut naturalis; et secunda , quod movetur et non corrumpitur ut disciplinalis; tertia considerat, quod nec movetur nec corrumpitur ut divina. ⁸⁶	Et propter illud sunt species scientiae tres . Quarum una speculatur in eo quod movetur, sed est corruptibile , et secunda considerat in eo quod movetur, verumtamen est incorruptibile , et tertia contemplatur in eo quod non corrumpitur neque movetur . ⁸⁷

Both the texts explicitly mention the species of sciences, differently from the Greek original of Aristotle’s work, and use the same terms to refer to the three objects of the theoretical sciences. These objects are distinguished through the consideration of their movement and corruption, and the mathematical objects are described as having movement but as incorruptible beings. It is clear, then, that Gundissalinus is using the text of the *Physics*, and it is evident that he is here using Gerard’s translation of Aristotle’s *Physics*. The two excerpts are in fact too close to posit a common of source to both, that is, the Arabic text of the *Physics*; rather Gundissalinus’s access to Gerard’s translation should be supposed. James of Venice’s *translatio vetus* is lexically further away from both Gerard’s and Gundissalinus’s versions. All the same, it is worth noting that Gundissalinus’s addition of Boethian contents to the Aristotelian quoted text, through which he

⁸⁴ A. Fidora, *Domingo Gundisalvo y la teoría de la ciencia árabe-aristotélica*, pp. 133-147.

⁸⁵ Aristoteles Latinus, *Physica, translatio vetus*, II, 7, 198a29-331, ed. Bossier and Brams, Leiden - New York: Brill, 1990, p. 80,6-8.

⁸⁶ Dominicus Gundissalinus, *De divisione philosophiae*, p. 15,11-15.

⁸⁷ Aristoteles, *Liber de naturali auditu*, II, translatio Gerardi, Paris, Bibliothèque Nationale de France, lat 16141, f. 41r, in A. Fidora, *Domingo Gundisalvo y la teoría de la ciencia árabe-aristotélica*, pp. 138-9.

names the theoretical sciences, is a typical trait of Gundissalinus's attitude toward his sources, both Latin and Arabic.⁸⁸

Traces of the *Physics* seem to be recognizable in two further references by Gundissalinus to Aristotle, one from the *De anima* and the other from the *De processione mundi*. The text of the *De anima* is as follows:

[M.] Licet autem cotidie creentur novae animae: non tamen creantur in tempore. **Tempus enim secundum Aristotelem est mensura spaciae continentis prius et posterius, et secundum alios tempus est, cuius pars praeteriit, parsque futura est. Nihil ergo fit in tempore nisi ex intellectu habendi prius et posterius.**⁸⁹

Gundissalinus discusses here the daily creation of new souls, and in this context he briefly digresses to expound what time is: for Aristotle it is the measure of space containing before and after, while for others time is that thing of which one part has gone away while another part still has to come. Indeed, Gundissalinus continues, everything that happens in time is known to have a before and an after.

In the *De processione mundi* Gundissalinus presents the same passage, applying it to the problem of temporal creation:

[N.] Unde quamvis prima compositio sit ex creatis de nihilo – omnis autem compositio posterior est eis, ex quibus fit – tamen, sicut praedictum est, creatio compositionem nec tempore, nec ordine praecessit, quia non in tempore. Sed in instanti, scilicet subito, quoniam mundus nondum erat, simul utraque fuit. **Nihil enim fit in tempore, nisi ex intellectu habendi prius et posterius. Tempus enim secundum Aristotelem est mensura spatii secundum prius et posterius. Unde secundum alios tempus est, cuius pars praeteriit parsque futura est.**⁹⁰

The creation of the world did not precede its composition either in time or in order since they are not in time: on the contrary, they both happened simultaneously while the world was not yet existent. Furthermore, only what is known to have a before and an after happens in time. And here Gundissalinus repeats again the two definitions of time presented in his *De anima*.

⁸⁸ See N. Polloni, 'Gundissalinus on Necessary Being: Textual and Doctrinal Alterations in the Exposition of Avicenna's *Metaphysics*', *Arabic Sciences and Philosophy* 26/1 (2016), pp. 129-160.

⁸⁹ Dominicus Gundissalinus, *De anima*, p. 128, 2-5.

⁹⁰ Dominicus Gundissalinus, *De processione mundi*, p. 49,3-11.

The two excerpts are thus based on the same textual passage, quoted directly in both the *De anima* and the *De processione mundi*, and consisting of two different positions held by Aristotle and ‘some others’:

[1.] Aristotle: *tempus est mensura spatii secundum prius et posterius.*

[2.] Some others: *tempus est, cuius pars praeteriit parsque futura est.*

Now, the second definition of time is most probably derived from Priscianus, who in his *Institutiones* deploys exactly the same passage detected in the *De anima* and *De processione mundi*:

Gundissalinus	Priscianus, <i>Institutiones grammaticae</i>
secundum alios tempus est, cuius pars praeteriit, parsque futura est	tempus proprie dicitur, cuius pars praeteriit, pars futura est. ⁹¹

There is no doubt that Gundissalinus is quoting the text of the *Institutiones*: the two excerpts are indeed exactly coincident. This is interesting, since Priscianus constituted one of the main sources for the study and teaching of grammar, and his works were widely used and commented by scholars associated with Chartres. This suggests that the whole passage could derive from one of the Chartrian commentaries on Priscianus.

The origins of the reference to Aristotle’s definition of time is difficult to establish. On the one hand, it would seem to be derived directly from *Physica* IV, 11, where Aristotle discusses the nature of time and gives its well-known definition as ‘number of change in respect of before and after’.⁹² For Aristotle, time is an aspect of change, through which the changing process in before and after is perceived, and then, thanks to time the number is applicable to any change. It should be underlined that a few lines after having presented his definition of time, Aristotle deals with the problem of what it means to be in time (*Physica*, IV, 12, 220b32-221b6), a discussion whose echo can perhaps be heard in Gundissalinus’s claim that ‘nihil ergo fit in tempore nisi ex intellectu habendi prius et posterius’.

On the other hand, the textual comparison between Gundissalinus and the two Latin translation potentially available to him, James’s and Gerard’s, do not seem to display any point of contact:

⁹¹ Priscianus, *Institutiones Grammaticae*, VIII, ed. H. Keil, Leipzig 1855, p. 414,11.

⁹² Aristotle, *Physics*, IV, 11, 219b1, English translation by R. Waterfield, Oxford: Oxford University Press, 1996, p. 106.

Aristotle in Toledo

Gundissalinus, <i>De anima & De proc.</i>	Aristotle, <i>Physica</i> (tr. Iacobi)	Aristotle, <i>Physica</i> (tr. Gerardi)
Tempus enim secundum Aristotelem est mensura spatii secundum prius et posterius.	hoc enim est tempus: numerus motus secundum prius et posterius. ⁹³ tempus est numerus motus secundum prius et posterius. ⁹⁴	tempus est numeratio motus secundum prius et posterius. ⁹⁵ tempus numerus motus secundum prius et posterius. ⁹⁶

There is at least one fundamental inconsistency in Gundissalinus's version of Aristotle's definition: time is referred to as a measure of *space* in respect of before and after, while both the Latin translations of the *Physica* correctly state that time is the number (or numeration, in Gerard's translation) of *movement* in respect of before and after.

This fact is very interesting. Aristotle indeed grounds his concept of time on change, and at the same time, he states that *prius* and *posterius* are primarily found in space: they depend on position and are found in magnitude, and through their presence in magnitude, they can be found also in change and therefore are applied to time (*Physica*, IV, 11, 219a14-20). This fundamental bond linking together place, change, and time in Aristotle, would constitute a primary resource for subsequent Latin philosophy. A few decades after Gundissalinus, Roger Bacon will state, referring to the same Aristotelian passage, that 'prius et posterius in spatio sunt causa prioris et posterioris in translatione spatii et in duratione et ita in tempore, ut habetur in quarto *Physicorum*; ergo translatio speciei secundum prius et posterius spatii habet prius et posterius in duratione et ita in tempore'.⁹⁷

Aristotle's explanation of the implications of time and change also takes into account the example of a moving object that 'is different by being successively in different locations. And it now follows a moving object, just as time follows change; for it is the moving object that enables us to know before and after in

⁹³ Aristoteles Latinus, *Physica, translatio vetus*, IV, 11, 219b1, p. 175,15-17.

⁹⁴ Aristoteles Latinus, *Physica, translatio vetus*, IV, 11, 220a25, p. 178,15-16.

⁹⁵ Aristoteles, *Liber de naturali auditu*, II, translatio Gerardi, Paris, Bibliothèque Nationale de France, lat. 16141, f. 95v

⁹⁶ Aristoteles, *Liber de naturali auditu*, f. 97v

⁹⁷ Roger Bacon, *De multiplicatione specierum*, IV, 3, ed. D.C. Lindberg, Oxford: Clarendon Press, 1983, p. 222,24-28.

change, but the now exists in so far as the before and after are numerable'.⁹⁸ Avicenna makes his claim in his *Physica*, II, 11 in the same manner:

‘Motus enim per partes suas numerat prius et posterius: motus ergo non numerat ex hoc quod ipse habet in transitu prius et posterius: motus etiam habet mensuram propter mensuram transitus. Tempus autem est hic numerus et haec mensura. **Ergo tempus est numerus motus, cum divisus fuerit motus in prius et posterius, non tempore sed transitu;** alioquin, esset in hac declaratione definitio circularis, sicut putavit aliquis ex discipulis, et erravit’.⁹⁹

It could be the case that this excerpt by Avicenna, mentioning the passage (*transitus*) of *prius* and *posterior* as the condition for the understanding of time as number of movement, influenced Gundissalinus’s definition of time as ‘mensura spatii secundum prius et posterius’. While possible, this nonetheless seems quite improbable. In fact, the assertion presented by Gundissalinus ends up being quite far removed from the overall exposition given by Avicenna. Moreover, even if the supposition that Gundissalinus is trying to refer to the Aristotelian or Avicennian discussion on time is of interest, there is no doubt that Gundissalinus’s claim that time is the measure of *space* as regards to before and after is wrong, without any specific reference to movement, and it is wrong both in relation to Aristotle and from a doctrinal point of view. From this assertion, indeed, it should rather be understood that space is measured by time. This is evidently false, and would be unacceptable also for Gundissalinus.

From this perspective, the most probable explanation is that Gundissalinus is quoting this passage from a third source, in whose context the quoted text makes sense, while the insertion in Gundissalinus’s original writings suffers a certain lack of perspicuity. This could also clarify the bond between the two different definitions of time presented by Gundissalinus, Aristotle’s and Priscianus’s. If these two definitions constitute a single quotation, and the references to the spatial dimension of time could perhaps be considered as echoes of Augustine’s discussion on the same topic, the origin of this excerpt might well be a Chartrian text. The forthcoming critical editions of the two versions of William of Conches’s *Glosae super Priscianum* will hopefully provide some new data useful for clarifying this point. In the interim it can be suggested that Aristotle does not seem to be the direct source used by Gundissalinus, even though he most probably had ac-

⁹⁸ Aristotle, *Physics*, IV, 11, 219b20-26, English translation by R. Waterfield, p. 107.

⁹⁹ Avicenna, *Physica*, II, 11, pp. 324,70-325,76.

cess to the Latin translation of the *Physics* made by Gerard of Cremona, as has been demonstrated by the analysis of the previous occurrence of Aristotle's name.

Conclusion

The preliminary analysis of the explicit references to Aristotle in Gundissalinus's original writings shows that under the name of Aristotle are hidden a greater range and number of sources:

Source	No. of occurrences
Aristotle, <i>Topica</i>	2 occurrences
Aristotle, <i>Physica</i>	1 occurrence
Tot. Aristotle	3 occurrences
al-Fārābī	1 occurrence
Qusṭā ibn Lūqā	2 occurrences
al-Kindī	1 occurrence
Avicenna	5 occurrences
Tot. Arabic Sources	9 occurrences
Hermann of Carinthia	1 occurrence
Unknown Source	2 occurrences
Tot.	15 occurrences

Only three out of fifteen occurrences of Aristotle's name are actual quotations of his writings, the *Topica* and the *Physica*. Of these two, the former had been translated into Latin by Boethius, and only the latter is a translation by Gerard of Cremona. Explicit traces of Gerard's translation of the Aristotelian corpus appear only once in Gundissalinus's works, as a direct quotation from the *Physica*. Gerard's writings are quoted in a further passage which Gundissalinus derives from al-Kindī's *De quinque essentiis*. On one occasion, the source is a Latin philosopher, Hermann of Carinthia, while the source of two further occurrences remains unclear but is perhaps ascribable to the Chartrian *milieu* in which both Hermann and Gundissalinus philosophical experience was grounded.

Finally, nine of the occurrences of Aristotle's name are part of or added to quotations from Arabic texts by Qusṭā ibn Lūqā, al-Fārābī, al-Kindī and, above all, Avicenna. The Persian philosopher appears to be the source of at least five references, where Gundissalinus adds Aristotle's name to literal quotations from Avicenna's text, such as, for example, the *De medicine cordialibus*, or to a synthesis

of Avicennian doctrine and discussion, as, for example, the epistemological discussion of the *Liber de philosophia prima*. This aspect is intriguing. Gundissalinus seems to be strongly convinced of a coherence between Aristotle's and Avicenna's opinions, adding references to the former while quoting texts he presumably knew very well were not by Aristotle. The extent to which Gundissalinus was aware of the implications of this supposed consistency can be questioned. He did not have a wide knowledge of Aristotle, apart from the logical works and the writings that were translated in Toledo. A clue is possibly provided by the final part of the dedicatory letter of the Latin translation of Avicenna's *De anima* written by Abraham ibn Daud, Gundissalinus's collaborator:

'Habetis ergo librum, nobis praecipiente et singula verba vulgariter proferente, et Dominico Archidiacono singula in latinum convertente, ex arabico translatum: **in quo, quicquid Aristoteles dixit in libro suo de anima, et de sensu et sensato, et de intellectu et intellecto, ab auctore libri sciatis esse collectum**; unde, postquam, volente Deo, hunc habetis, in hoc illos tres plenissime vos habere non dubitetis'.¹⁰⁰

After expounding the method adopted in the realization of the translation he undertook with Gundissalinus, Ibn Daud clarifies to the Toledan archbishop, John II, the supposed sponsor of Gundissalinus's team of translators¹⁰¹ and, possibly, also of Gerard's, that in the writing by Avicenna is gathered together all Aristotle said in his books *De anima*, *De sensu et sensato*, and *De intellectu et intellecto*. In other words, Ibn Daud is here claiming a doctrinal coincidence between Aristotle and Avicenna, and implicitly also that Avicenna's speculation has a certain theoretical *surplus*, gathering together and developing Aristotle's writings.

It is possible, then, that Ibn Daud, a convinced Avicennist and a well-educated philosopher who was confident with the works by both Avicenna and Aristotle, lies at the origin of Gundissalinus's belief in the doctrinal coherence between these two authors. It is a matter of fact that Ibn Daud exercised influence over Gundissalinus with respect to cosmology¹⁰², and it seems quite possible that this

¹⁰⁰ Avicenna, *De anima seu sextus de naturalibus*, vol. I, ed. S. Van Riet, Louvain - Leiden: Brill, 1972, p. 4,21-26.

¹⁰¹ For the role played by John II regarding the establishment of Gundissalinus's team of translators, see A. Bertolacci, 'A Community of Translators: The Latin Medieval Versions of Avicenna's Book of the Cure', in *Communities of Learning: Networks and the Shaping of Intellectual Identity in Europe 1100-1500*, eds. C.J. Mews and J.N. Crossley, Turnhout: Brepols, 2011, pp. 37-54; and N. Polloni, 'Elementi per una biografia di Dominicus Gundisalvi'.

¹⁰² See N. Polloni, 'Toledan Ontologies: Gundissalinus, Ibn Daud, and the Problems of Gabirolian Hylomorphism', in *Appropriation, Interpretation and Criticism: Philosophical and Theological*

might be the case for other lines of thought. This suggestion could also contribute in casting some light on the very development of the translation movement. After the Latin translation of the *De anima*, none of the writing by Aristotle that Ibn Daud states to be contained in Avicenna's work would be translated in Toledo, while the translation of Avicenna's *Liber de philosophia prima* is not accompanied by that of Aristotle's *Metaphysica*, a text that might have been expected to be translated in Toledo. Perhaps, for the same reasons the Latin translation of Aristotle's *Physica* made by Gerard meets only a partial translation of the homonymous writing of Avicenna by Gundissalinus.

As for Gundissalinus's use of Aristotle's writings, the present analysis has tested the grounds of Gundissalinus's doctrinal relation with Aristotelianism, and focused on the explicit references to Aristotle in Gundissalinus's works. The outcome of this examination suggests that the Toledan philosopher very probably had access to Gerard's translation of the *Physics*, but at the same time that Gundissalinus was quite aware of the wider philosophical production of Aristotle. It is clear that Gundissalinus is likely to have had access to a larger number of Aristotelian writings, both in Latin and in Arabic translation. However, the present discussion has shown that under the name of Aristotle in Gundissalinus's writings Arabic sources rather than the Stagirite may be at play.

Exchanges Between the Arabic, Hebrew and Latin Intellectual Traditions, ed A. Fidora and N. Poloni, forthcoming.