Reading Proclus and the *Book of Causes*
Volume 2

Translations and Acculturations

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Three Double Translations from Arabic into Latin by Gerard of Cremona and Dominicus Gundisalvi

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Among the many philosophical translations from Arabic into Latin in twelfth-century Spain, there are some that were translated twice, notably Alkindi's *On the Intellect*, Alfarabi's *Enumeration of the Sciences* and Isaac Israeli's *On Definitions and Descriptions*.[1] It has often been suggested that the two translators of these three texts were Gerard of Cremona and Dominicus Gundisalvi, the two contemporaries and canons of Toledo cathedral in the later twelfth century. The first part of this paper musters the evidence for these ascriptions in the manuscripts of the translations, that is, in the titles and colophons, and also considers translator attributions in other medieval texts, such as the well-known list of translations by Gerard of Cremona drawn up by his *socii*.[2]

In all three cases, many verbal parallels between the two translations show that one translation is a revision of the other. But it is not clear which version was first. In the second part of the paper, I shall propose a philological solution to this question.

I will also be concerned with a fourth text, the *Liber de causis*. Of this famous text, which in Arabic is called *The Discourse on the Pure Good* (*Kalām fī maḥd al-ḥayr*), there exists only one version by the translator Gerard of Cremona. But it has been argued that this version is in fact the result of a stylistic revision by another translator, Dominicus Gundisalvi.[3] I shall come back to this question at the end of this paper.

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3   Adriaan Pattin, editor of the 1966 edition of the Latin *Liber de causis*, has argued that the translation by Gerard of Cremona was revised by Dominicus Gundisalvi. He claims that the vocabulary of Gundisalvi is evident in two cases: in the term *intellectibilis* and in the phrase *habent essentiam* (Pattin 1966, p. 98). Richard Taylor has argued that this evidence is not conclusive: "There is no evidence to suggest in any substantial way that the translation of the Liber de causis was systematically revised by anyone" (Taylor 1988, p. 80). I am not convinced

1   The Manuscript Evidence: Titles and Translators

In what follows, I shall discuss the manuscript evidence for Alkindi's *On the Intellect*, Alfarabi's *On the Sciences* and Isaac's *On Definitions* in sequence, focusing on the titles and translators named in the manuscripts. The first text is Alkindi's *On the Intellect* (*Risāla fī l-ʿaql*). This short text, whose main sources are Aristotle, Alexander of Aphrodisias and John Philoponos, discusses four different kinds of intellect, one outside and three inside the soul. This doctrine influenced later authors such as Alfarabi and Avicenna, but also the scholastic discussion.[4] The two Latin translations of Alkindi's *On the Intellect* were edited in 1897 by Albino Nagy. One translation, with the incipit *Intellexi quod quesivisti de scribendo sermonem*, was edited by Nagy with the subtitle "translatum a magistro Gerardo Cremonensi". The other translation, with the incipit *Intellexi quod queris scribi tibi sermonem*, was edited without any mentioning of the translator. The first translation uses *ratio* for rendering the Arabic term *ʿaql* ('intellect'), the second *intellectus*. Nagy's ascription of the *De ratione* translation to Gerard of Cremona is based on the evidence of one manuscript, as the table below shows. I have tried to check as many titles, colophons, incipts and explicits as possible in a reasonable time by turning to Marie-Thérèse d' Alverny's *Codices* volume in the Avicenna Latinus series and to the online indices *In principio*, *Manus Online* and *Manuscripta mediaevalia*.

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of the *intellectibilis* argument by Pattin, since the only occurrence of *intellectibilis* in Gundisalvi's translations is one sentence in Avicenna's *De anima* on *principiis intellectibilibus*, where an alternative reading is *principiis intelligibilibus* (see Van Riet 1968–1972, vol. II, p. 153, manuscript v). For more information on the Latin translation see d'Ancona, Taylor 2003, p. 610–617.

4   On this work see Adamson 2007, p. 118–127; Rudolph 2012, p. 109.

1.1 *Alkindi,* On the Intellect / De ratione[5]

Incipit: *Intellexi quod quesivisti de scribendo sermonem …*
Explicit: *… sermo enuntiativus sufficiat.*

at least eight manuscripts

Manuscript	Title	Colophon
Admont, Stiftsbibliothek, 578, f. 34v	Tractatus Alpharabii de modis acceptionum huius nominis ratio	–
Baltimore, The Walters Art Museum, W.66, f. 240v–241v	Expositio intellectus secundum sententiam Platonis et Aristotelis	–
Brugge, Hoofdbibliotheek Biekorf, 424, f. 309r	–	–
Bruxelles, Bibliothèque royale de Belgique, II 2558, f. 99r–v	Incipit liber de ratione sive de formis rationis	Explicit liber de ratione sive de formis rationis
Firenze, Biblioteca Nazionale Centrale, Conv. Soppr. G. 4. 354, f. 111v	–	–
Oxford, Bodleian Library, Digby 217, f. 115v	–	–
Paris, Bibliothèque nationale de France, Latin 6443, f. 190r	Verbum Iacob Alkindi de intentione antiquorum in ratione translatum a magistro Gerardo Cremonensi	–
Roma, Biblioteca Angelica, 242, f. 18r	Incipit verbum Iacob Alchindi de ratione	Explicit verbum Iacob Alchindi de intentione antiquorum in ratione

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5   See the MSS listed by Nagy 1897, p. XXX–XXXI.

The translator Gerard of Cremona is mentioned in only one manuscript. I am not aware of any significant external evidence; most importantly, the translation is not mentioned in the *socii*'s list of Gerard's translations. The ascription to Gerard of Cremona is not unreasonable, but needs to be treated with some caution; it will find support from the stylistic arguments below.

The other translation does not give the name of a translator in the 21 manuscripts available to me. Its title is *De intellectu et intellecto* or simply *De intellectu*.

1.2   *Alkindi,* On the Intellect / De intellectu et intellecto
Incipit: *Intellexi quod queris (tibi scribi) sermonem ...*
Explicit: *... tantum sermonis de hoc sufficiat.*

at least twenty-one manuscripts

Manuscript	Title	Colophon
Cava de' Tirreni, Biblioteca statale del Monumento nazionale della Abbazia Benedettina della Ss. Trinità, 31, f. 234r–235r	–	–
Cesena, Biblioteca Malatestiana, D.XXII.3, f. 2r	Epistola Auerois de intellectu	Hic finis est Epistole Aueroys de intellectu
Città del Vaticano, Biblioteca Apostolica Vaticana, Barb. lat. 463, f. 85r–85v	–	–
Città del Vaticano, Biblioteca Apostolica Vaticana, Vat. lat. 2186, f. 70v–71r	Liber Aliquindi philosophi de intellectu et intellecto	–
Città del Vaticano, Biblioteca Apostolica Vaticana, Vat. lat. 4426, f. 6r–v	Incipit liber Alkindi de intellectu	Explicit liber Alkindi de intellectu
Erfurt, Universitätsbibliothek, CA 2° 29, f. 210r–v	–	–
Erfurt, Universitätsbibliothek, CA 4° 15, f. 54v–55r and 55v	Libellus de intellectibus	–
Graz, Universitätsbibliothek, 482, f. 234r–v	–	–

(*cont.*)

Manuscript	Title	Colophon
København, Det Kongelige Bibliotek, Thott 164 2°, f. 117r–v	De intellectu	–
Lisboa, Biblioteca Nacional de Portugal, Fondo Geral 2299, f. 171r–v	–	–
ibid., f. 208r–v	–	–
Modena, Biblioteca Estense Universitaria, Lat. 296 = alfa.M.8.21, f. 35v–36r	–	–
München, Bayerische Staatsbibliothek, Clm 8001, f. 114r–v	–	–
Oxford, Bodleian Library, Digby 217, f. 178r–v	–	–
Oxford, Merton College Library, 278, f. 183v	–	–
Paris, Bibliothèque nationale de France, Latin 6443, f. 195r	Liber Alquindi philosophi de intellectu et intellecto	–
Paris, Bibliothèque nationale de France, Latin 16602, f. 111r–111v	Liber Alexandri de intellectu	–
Paris, Bibliothèque nationale de France, Latin 16613, f. 100r–101r	De intellectu secundum Aristotelem et Platonem	Explicit liber de intellectu et intellecto secundum Alpharabium
Uppsala, Universitetsbibliotek, C 595, f. 24v–25r	–	–
Venezia, Biblioteca Nazionale Marciana, Lat. VI, 150 (= 2671), f. 64r	–	–
Worcester, Cathedral Library, Q. 81, f. 84v	Liber Alquindi philosophi de intellectu et intellecto	–

Gundisalvi's own works *De divisione philosophiae* and *Liber de anima* do not quote this translation, to the best of my knowledge, and I am not aware of quotations in other works by Gundisalvi either.

The second double translation is of Alfarabi's famous *Enumeration of the Sciences (Iḥṣāʾ al-ʿulūm)*, which was important for the intellectual development of the Latin West in several respects: because it offered a systematic and broad division of the sciences, many of which were not known in the Latin West; because it measured all sciences against the ideal of demonstrative reasoning;[6] and because it apparently prompted a good number of translators in twelfth- and thirteenth-century Spain to fill in the gaps in the Latin spectrum of sciences by producing new translations from Arabic.[7]

One of the two translations stems from Gerard of Cremona. This we know from the students' list, which contains the entry *Liber Alfarabii de scientiis* among Gerard's philosophical translations. Moreover, the translation with the incipit *Nostra in hoc libro intentio* is ascribed to Gerard of Cremona in two of the four manuscripts extant.

1.3   *Alfarabi,* Enumeration of the Sciences / De scientiis

Incipit: *Nostra in hoc libro intentio est scientias famosas …*
Explicit: *… sicut fit mulieribus et infantibus.*

at least four manuscripts

Manuscript	Title	Colophon
Admont, Stiftsbibliothek, 578, f. 27r–33r	Incipit liber Alpharabii de divisione scienciarum	Completus est liber Alpharabii vel Albunazir de scienciis
Brugge, Hoofdbibliotheek Biekorf, 486, f. 94r–110v	Liber Alfarabii de scientiis translatus a magistro Gerardo Cremonensi de arabico in latinum	–

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6   See Hasse 2020, ch. 2, with further literature.
7   Burnett 2001.

(*cont.*)

Manuscript	Title	Colophon
Graz, Universitätsbiblio-thek, 482, f. 222v–229r	–	Completus est liber Alfrabii vel Abunazir de sentenciis
Paris, Bibliothèque nationale de France, Latin 9335, f. 143va–151vb	Liber Alfarabii de scientiis translatus a magistro Gir-ardo Cremonensi in Toleto de arabico in Latinum	–

The other translation, with the incipit *Cum plures essent*, is extant in at least nine manuscripts. As the below list of titles and colophons shows, the treatise is most commonly called *De divisione scientiarum* and is clearly identified as being written by Alfarabi. But none of the manuscripts mentions the name of the translator. This needs to be emphasized, as an antidote against the optim-istic titles given to the treatise by modern editors: Manuel A. Alonso edited the text as *Domingo Gundisalvo: De scientiis, compilación a base principalmente de la Maqāla fī iḥṣāʾ al-ʿulūm de al-Fārābī*, and Jakob H.J. Schneider under *Al-Fārābī: De scientiis secundum versionem Dominici Gundisalvi*, where the phrase *secundum versionem* is Schneider's own Latin creation. This is not wrong, as we shall see, but it is not how medieval readers knew the text.

1.4 *Alfarabi,* On the Sciences / De divisione scientiarum
Incipit: *Cum plures essent* (*olim*) *philosophi* …
Explicit: … *alia in operationibus*.

at least nine manuscripts

Manuscript	Title	Colophon
Cambridge, Fitzwilliam Museum, McClean 169 (16), f. 240r–246r	–	libellus Alph. de diu. sci.
Erfurt, Universitätsbiblio-thek, CA 2° 32, f. 79r–88r	Liber Alphorabii de propri-etatibus scientiarum valde bonus	–

(*cont.*)

Manuscript	Title	Colophon
Erfurt, Universitätsbibliothek, CA 4° 295, f. 24r–35r	Incipit liber Alforabii de divisione scientiarum	–
Lisboa, Biblioteca Nacional de Portugal, Fondo Geral 2299, f. 165va–169vb	De divisione scientiarum	–
London, British Library, Cotton Vespasian B X 5, f. 24ra–27rb	Incipit Alpharabius de divisione omnium scientiarum	Explicit liber Alpharabii de divisione omnium scientiarum
Oxford, Merton College Library, 230, f. 29ra–32ra	–	–
Wien, Bibliothek des Dominikanerkonvents, 151 (olim 121), f. 132r–133v	Alpharabi de divisione scientiarum	Explicit Alpharabi de divisione scientiarum
Wien, Österreichische Nationalbibliothek, 2473, f. 1a–29b	Alpharabius iurisconsultus de origine scientiarum	–
Worcester, Cathedral Library, Q. 81, f. 85r–87v	Liber Alfarabi de scientiis	–

The anonymous *Cum plures essent* version is the main source of Dominicus Gundisalvi's own treatise *De divisione philosophiae*, which also draws on other sources by Avicenna and al-Ġazālī.[8]

The third double translation is of the treatise *On Definitions and Descriptions* (*Kitāb al-Ḥudūd wa-r-rusūm*) by Isaac Israeli, the philosopher and physician who was active in Qayrawān in North Africa in the early tenth century and makes much use of writings by Alkindi. One can say with great certainty that one of the two translations comes from Gerard of Cremona. The translation with the incipit *Plures eorum qui* is attributed to Gerard in two of the at least 16 manuscripts. It seems that this translation traveled under two titles: a short title, which is *Liber de diffinitionibus*, and a long title, which involves the phrases

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8   See Fidora, Werner 2007. For a convenient juxtaposition of Gerard's version, the *Cum plures essent* version and of Gundisalvi's own *De divisione philosophiae* on the metaphysical science, see Polloni 2016, p. 100–106.

Collections from the sayings of the philosophers and *About the difference between definition and description.* These phrases appear also in an Arabic-Hebrew translation and apparently belonged to the original Arabic title, which is lost.[9] The long title has close verbal parallels with the entry in the *socii*'s list of Gerard's translation: *Liber Ysac de descriptione rerum et diffinitionibus earum et de differentia inter descriptionem et diffinitionem.*[10] This again supports the ascription of the translation to Gerard.

1.5   *Isaac Israeli,* On Definitions / Liber de diffinitionibus
Incipit: *Plures eorum qui antiquorum libros inspexerunt …*
Explicit: *… testificatur illius contrarium.*

at least sixteen manuscripts

Manuscript	Title	Colophon
Bernkastel-Kues, Bibliothek des Cusanusstifts, 205, f. 121r–v	Collectiones hee sunt ex dictis philosophorum …	Explicit liber deffinitionum Ysaac
Bologna, Biblioteca del Collegio di Spagna, 103, f. 111ra–1vvb	–	–
Città del Vaticano, Biblioteca Apostolica Vaticana, Vat. lat. 2186, f. 46v–50r	–	–
Kraków, Biblioteka Jagiellońska, 816, f. 1r–6v	–	–
Lisboa, Biblioteca Nacional de Portugal, Fondo Geral 2299, f. 301v–307r	–	–
Mainz, Wissenschaftliche Stadtbibliothek, I 519, f. 114v–118r	Collectis ex dictis philosophorum …	–
Olomouc, Státní okresní archiv, C O 536, f. 10r–13v	Incipiunt diffinitiones Ysaac … filii Salomonis.	–

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9   Altmann, Stern 1958, p. 11, fn.
10   Burnett 2001, p. 280.

(*cont.*)

Manuscript	Title	Colophon
	Collectiones ex dictis philosophorum de differentia inter descriptiones et diffinitiones rerum et quare philosophia fuit descripta et non diffinita. De quorum aggregatione et ordinatione Ysaac medicus sollicitus fuit. Verba Ysaac	–
Oxford, Bodleian Library, Digby 217, f. 111r–115v	Incipit liber Isaac de diffinitionibus translatus a magistro G. Cremon. in Toleto	–
Paris, Bibliothèque de l'Arsenal, 750, f. 99rb–101vb	Incipit liber de diffinitionibus Ysaac	–
Paris, Bibliothèque nationale de France, Latin 6443, f. 187r–190r	Liber Ysaac de diffinitionibus translatus a magistro G. Cremonensi in Toleto	Finiuntur collectiones Ysaac Israelite medici in descriptionibus rerum et diffinitionibus earum et differentia inter descriptionem et diffinitionem
Paris Bibliothèque nationale de France, Latin 14700, f. 153r–160v	Collectiones ex dictis philosophorum de differencia inter descripciones rerum et definiciones earum et quare philosophia fuit descripta et non definita; de quorum aggregacione et ordinacione Isaac medicus filius Salomonis sollicitus fuit. Verba Ysaac	Finiuntur collectiones Ysaac Israelite medici in descriptionibus rerum et diffinitionibus earum et differentia inter descriptionem et diffinitionem

(*cont.*)

Manuscript	Title	Colophon
Paris, Bibliothèque Sainte-Geneviève, 2236, f. 106r–116r	Incipit liber de diffinicionibus Ysach	–
Praha, Národní knihovna České republiky, 2364 (XIII.F.26), f. 59r–65v	–	–
Roma, Biblioteca Angelica, 242, f. 20v–24r	Incipit liber diffinitionum et descriptionum Ysaac summi philosophy	–
Uppsala, Universitetsbiblioteket, C 659, f. 114v–118r	Collectum ex dictis philosophorum de differentia	–
Weimar, Herzogin Anna Amalia Bibliothek, Fol. 61, f. 90v–94v	Collectiones ex dictis phylosophorum de differencia inter descriptiones rerum …	Explicit liber diffinitionum

The second Isaac translation with the incipit *Quamplures in libris* is transmitted in at least six manuscripts, and hence less often than Gerard's version. Its title is *De diffinitionibus*. The manuscripts do not mention any translator.

1.6   *Isaac Israeli,* On Definitions / De diffinitionibus
Incipit: *Quamplures* (*invenientes*) *in libris philosophorum* …
Explicit: … *resolutionem ex motu.*

at least six manuscripts

Manuscript	Title	Colophon
Cambridge, St. John's College Library, 120 IV, f. 178r–182r	–	–
Edinburgh, University Library, 134, f. 34v–36v	Incipit liber Isaac de diffinitionibus	–

(*cont.*)

Manuscript	Title	Colophon
Erfurt, Universitätsbiblio- thek, CA 2° 32, f. 88v–92v	–	–
München, Bayerische Staatsbibliothek, Clm 8001, f. 151v–154v	Incipit Ysaac de diffini- cionibus	Explicit Ysaac
Oxford, Corpus Christi College Library, 86, f. 219v– 224r	Incipit liber Ysaac de diffinitionbus	Explicit Ysaac de diffini- tionibus et descriptionibus
Wien, Bibliothek des Dominikanerkonvents, 151 (121), f. 133v–135r	Ysaac de diffinitionibus	–

Dominicus Gundisalvi silently quotes from this version of Isaac's *On Definitions* in his *Liber de anima* and his *De divisione philosophiae*.[11] This is very indicative, but it does not yet prove that Gundisalvi was the translator of the version. It only shows that the translation predates the composition of the two treatises by Gundisalvi.

As to Gundisalvi as the translator of the three anonymous versions, we are on firmer ground with the stylistic evidence for translator attribution that I have presented in the article "Notes on Anonymous Twelfth-Century Transla- tions", published together with Andreas Büttner, which focuses on philosoph- ical translations from Arabic into Latin on the Iberian Peninsula. The analysis of small words and phrases specific to known translators leads to the result that it is probable that the anonymous version of all three texts, i.e. Alkindi's *On the Intellect*, Alfarabi's *Enumeration* and Isaac's *On Definitions*, was produced by Dominicus Gundisalvi.[12] This result will be corroborated by the present paper, in particular by the last table below which lists Gundisalvian vocabulary that distinguishes Gundisalvi from Gerard.

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11   Muckle 1940, p. 98 (*De anima*) and Fidora, Werner 2007, p. 56–60 (*De divisione philo- sophiae*).
12   Hasse, Büttner 2018, p. 338–341.

2   Which Version Was First?

Gerard of Cremona and Dominicus Gundisalvi were contemporaries, and both were canons of the cathedral of Toledo: Gerard is mentioned in three charters of the cathedral in 1157, 1174 and 1176. He dies in 1187. Gundsalvi appears in charters between 1162 and 1190. The dates of their lives, therefore, do not settle the question of who was translating first.

The issue of the priority of the two versions has often been discussed, especially with respect to Alfarabi's *On the Sciences*.[13] Gerard's version of this text is a literal translation; Gundisalvi's translation is shorter, less than half the length of Gerard's translation, and leaves out, among other things, topics touching on the religion of Islam and on Arabic grammar. Manuel Alonso,[14] Richard Lemay,[15] Jacob H.J. Schneider,[16] Alain Galonnier[17] and others have suggested that Gundisalvi's shorter version was the earlier one. They argue that Gundisalvi's translation is a Latin digest or compendium of the Arabic original, and that Gerard later decided he wanted to have a literal and complete version.

In contrast, Michael C. Weber,[18] Franz Schupp[19] and others have argued that Gerard was first and that Gundisalvi later revised Gerard's text, leaving out passages he did not find relevant. One reason advanced for Gundisalvi being the reviser is that his vocabulary is believed to be more up-to-date, more current in the philosophy of the twelfth century: Gundisalvi writes *essentia* instead of *existentia*, *practica* instead of *activa*, *theorica* instead of *speculativa*.[20] But Richard Lemay argues that Gerard of Cremona consciously avoids certain vocabulary and that he did this when correcting Gundisalvi's early and incomplete translation.[21] As one can see, the issue is not settled by these arguments. Both stories are possible: that Gerard found Gundisalvi's shorter translation deficient and decided to complete it. Or that Gundisalvi took Gerard's

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13   See the summary of the discussion in Schupp 2005, p. LXIII–LXIV.

14   Alonso 1954, p. 13–32. Cf. also Farmer 1960, p. 19–20, who believes that Gerard of Cremona revised the translation by Gundisalvi (which he believes to be by "John of Seville") because he was concerned about the omissions and wanted to be more faithful to the Arabic.

15   Lemay 1978, p. 175 and 181–182.

16   Schneider 2006, p. 116–117.

17   Galonnier 2016, p. 78–79.

18   Weber 2002, p. 131–132. Another scholar who advocates the priority of Gerard's version, is Jolivet 1988, p. 135–136. Burnett 2001, p. 269, leaves the matter open.

19   Schupp 2005, p. LXIV.

20   Schupp 2005, p. LXIV.

21   See n. 15 above.

literal translation and transformed it into something more understandable for
the Latin reader.

My idea of a philological solution to the question is best explained by turn-
ing to an example, a passage from Alkindi's *On the Intellect*. The following table
offers a synopsis of the two Latin versions by Gerard and Gundisalvi, as edited
by Nagy:[22]

Alkindi, *On the Intellect*

	Gerard of Cremona	Anonymous (Gundisalvi)
1	ratio	
2	igitur	
3		intellectus
4	et	
5	rationatum	intellectum
6	sunt	
7	res una *ex parte* animae. Ratio	unum *secundum quod sunt in* anima. Intellectus
8	uero	
9	quae	qui
10	est	
11		in
12	actu semper	
13	faciens extrahere	et qui extrahit
14	animam ad hoc ut fiat	
15	rationalis actu	in effectu intelligens
16	postquam fuerat	
17	rationalis	intelligens in
18	potentia,	
19		ipse et intellectum ipsum
20	non	
21	est ipsa et rationatum	sunt
22	res	
23	una. Rationatum	una. Intellectum
24	igitur in anima et	

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22   The table was created with a computer programme written by my Würzburg colleague
      Andreas Büttner.

Alkindi, *On the Intellect* (*cont.*)

	Gerard of Cremona	Anonymous (Gundisalvi)
25	ratio prima	intellectus primus
26	*ex parte*	
27	rationis	intelligentiae
28	primae non	
29	est	sunt
30	res una	

The column on the left contains Gerard's version, the column on the right Gundisalvi's. In some parts, both versions have the same text, which is when the line of the table is not divided into two columns. Line 14, for instance, only contains the words *animam ad hoc ut fiat*, which appear in both versions. In the following line 15, the two versions differ: Gerard writes *rationalis actu* where Gundisalvi has *in effectu intelligens*. Line 16 is again identical in both versions: *postquam fuerat*. It is very clear from this table that the two versions share a good amount of text and that one version is a revision of the other. But which was first?

The problem can be solved, I suggest, by concentrating on the text shared by both translators: that is, the lines without a break in the middle, the text which is common ground, which is unrevised and hence clearly part of the earlier translation. Does it contain the vocabulary of Gerard or of Gundisalvi? This is the crucial question.

The table above with a passage of Alkindi's *On the Intellect* gives first hints towards an answer. In line 7 of the table, Gerard of Cremona writes *ex parte*, where Gundisalvi has *secundum quod sunt in*, translating the Arabic *min ǧiha*, 'with respect to', or 'from the perspective of'.[23] The two different renderings appear again in another passage of the text (not quoted here). But in line 26, the text is unchanged: *ex parte* appears in both versions. This is an indication that *ex parte* is Gerard's vocabulary and that it comes from the original translation.

This, of course, is only a single passage. It is advisable to base stylistic arguments on a systematic approach to make them convincing. In the following, this is attempted in three methodical steps: first, by focusing on words and phrases highly characteristic of Gerard of Cremona or Dominicus Gundisalvi if

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23   Abū Rīda 1950–1953, p. 356 and 357. The other passage is on p. 355; here *ex parte* and *secundum quod sunt in* translate *ammā … fa* ('as to').

compared against other Arabic-Latin translators of the twelfth century on the Iberian Peninsula; second, by focusing on the vocabulary that distinguishes the translations of Gerard of Cremona from those of Dominicus Gundisalvi; and third, by focusing on words and phrases that the common ground shares with one of the two versions. In other words, the three approaches search for stylistic evidence in the common ground by comparing its vocabulary to three sets of texts of decreasing size: comparing, first, against the translations of other persons; second, against other translations by Gerard and Gundisalvi; and third, against the individual versions of the three double translations.

(1) Let us start with the words singled out as highly characteristic of Gerard or Gundisalvi. In the above-mentioned paper "Notes on Anonymous Twelfth-Century Translations", about 50 words and phrases were isolated for Gerard and Gundisalvi respectively as being exclusively characteristic for them if analyzed as part of a set of 29 philosophical translations and 23 astronomical and astrological translations of the twelfth century. Do any of these highly characteristic words reappear in the common ground of the three double translations? The answer is presented in the following table:[24]

<div style="text-align:center">Gerard's and Gundisalvi's translations compared against other translators</div>

	Gerard of Cremona: stylistic words in the common ground	Dominicus Gundisalvi: stylistic words in the common ground
Alkindi, *On the Intellect*	sunt res una (1)	–
Alfarabi, *On the Sciences*	–	–
Isaac Israeli, *On Definitions*	reliquarum (1), absque medio (1), eius et ipsius (1)	–

While there are no words specific to Gundisalvi in the common ground, we encounter one phrase specific to Gerard in Alkindi and three such Gerardian phrases in Isaac Israeli. One phrase in Alkindi, of course, is not very strong evidence, even in a short text, but the three highly characteristic phrases in Isaac are significant. This is a first robust indication that the common ground of the

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24   The word count is based on the following editions of the Latin versions: Nagy 1897, p. 1–11, for *On the Intellect*; Schupp 2005 and Schneider 2006 for *On the Sciences*; Muckle 1937–1938 for *On Definitions*.

two Isaac Israeli translations is the work of Gerard and not of Gundisalvi. Also, it makes us wonder whether Gundisalvi was involved in the production of the common ground at all.

(2) In a next step, we do not consider the other translators of the century any more, but concentrate on terms and phrases that distinguish between the translations of Gerard and Gundisalvi only. The corpus on which this search is based contains eight translations by Gerard and seven by Gundisalvi, all in the field of philosophy.[25] I have split up each of the double translations into three files, in the manner of the table above with the *ex parte*-passage from Alkindi's *On the Intellect*, which was divided into three columns. One file contains the common ground, one file the text isolated for Gerard, one file the text isolated for Gundisalvi. As the table below shows, Gundisalvi's isolated texts are shorter than Gerard's—with the exception of Alkindi's *On the Intellect*, where they have about the same length—but they are still long enough to be useful for stylistic analysis.

	Gerard's translation	Gerard's isolated text	Common ground	Anonymous's (Gundisalvi's) isolated text	Anonymous Translation (Gundisalvi)
Alkindi, *On the Intellect*	733 words	358	375	430	805
Alfarabi, *On the Sciences*	15106	11994	3112	3788	6900
Isaac Israeli, *On Definitions*	7124	4624	2500	1952	4452

I have then started to search, with a search software written by Andreas Büttner, for all those terms in Alkindi's *On the Intellect* which are both in Gerard's isol-

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25   The corpus consists of the following translations: Gerard of Cremona's translations of Aristotle, *Analytica posteriora*; Aristotle, *De caelo*; Aristotle / Ibn al-Biṭrīq, *Meteora* I–III; Ps.-Aristotle, *Liber de causis*; Alexander of Aphrodisias, *De tempore, De sensu, De eo quod augmentum*; Themistius, *Comm. on Analytica posteriora*; Alkindi, *De quinque essentiis*; and Alkindi, *De somno et visione*; as well as Dominicus Gundisalvi's translations (partly produced together with collaborators) of Avicenna, *De anima*; Avicenna, *De medicinis cordialibus*; Ibn Gabirol, *Fons vitae*; Algazel, *Summa theoricae philosophiae*; Avicenna, *Philosophia prima*; Avicenna, *De convenientia et differentia scientiarum*; Ps.-Avicenna, *Liber celi et mundi*.

ated text and in the common ground, but not in Gundisalvi's isolated text and not in any of Gundisalvi's seven translations either. This I did for Alfarabi and Isaac Israeli too, and then repeated the procedure for Gundisalvi: I searched for vocabulary of Gundisalvi's isolated text which is in the common ground, but not in Gerard's isolated text nor in any of Gerard's translations in the corpus either. The aim of this approach is to see whether any vocabulary of the original translation, which is untypical of the other translator, survived in the common ground. The result is presented in the table below.[26]

It proves a sensible procedure to extinguish all those terms that are used in the other philosophical translations by Gerard and Gundisalvi. The phrase *ex parte*, for instance, which we met above, does not appear in the table below, even though it seemed clear that Gundisalvi twice changed Gerard's phrase *ex parte* into *secundum quod sunt in* and once left *ex parte* untouched. In fact, however, *ex parte* belongs to Gundisalvi's regular vocabulary in other translations, and the (low) possibility remains that Gundisalvi wrote both *secundum quod sunt* and *ex parte* in the common ground. This is why in this second approach the focus is on vocabulary that reappears in the common ground, but not in the other translations of the rival translator.

Note that the vocabulary in this table—other than in the first approach above—is not purely stylistic, but contains many content words that are specific to single disciplines, such as *pondera* ("weights") or *civitates* ("states").

Gerard's translations compared against Gundisalvi's translations

	Gerard of Cremona: vocabulary from Gerard's isolated text untypical of Gundisalvi in the common ground	Dominicus Gundisalvi: vocabulary from Gundisalvi's isolated text untypical of Gerard in the common ground
Alkindi, *On the Intellect*	sermonis (2 occ. in Gerard's isolated text/1 occ. in the common ground)	effectum (3/1), exit (2/2)
Alfarabi, *On the Sciences*	sermones (24/1), declarat (11/3), civitatibus (10/3), pondera (6/1), erret (6/1), gentis (5/1), conditiones (5/1), ponderum (3/1), uteretur (3/1), inimicus (3/1), propalavit	de dictionibus (5/2), est proprium (4/1)

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26   The table lists terms or phrases that appear at least twice in the isolated texts. Not included are two-word phrases with *et*, which are legion and of doubtful stylistic value.

Gerard's translations compared against Gundisalvi's translations (*cont.*)

	Gerard of Cremona: vocabulary from Gerard's isolated text untypical of Gundisalvi in the common ground	Dominicus Gundisalvi: vocabulary from Gun- disalvi's isolated text untypical of Gerard in the common ground
	(3/1), topicis (2/1), syllogistici (2/1), penet-rabiliores (2/1), rationalibus (2/1), administrentur (2/1), quorum proprietas (9/1), quibus rebus (8/2), in civitatibus (7/3), in summa (4/3), dictionum significantium (2/1), deinde inquirit (3/1), non erret (3/1), sciat quibus (3/1), in sermonibus (3/1), sit modus (3/1), deinde comprehendit (2/1), sicut proportio (2/1), quorum proprietas est (7/1), proprietas est ut (7/1), in civitatibus et (4/3), consuetudines et habitus (4/1), ad illud quod (3/2), et sermones quidem (3/1), et quibus rebus (3/1), deinde inquirit de (2/1), et illa quidem (2/1), in utrisque rebus (2/1), ut non erret (2/1), sit modus in (2/1), est ut administrentur (2/1), ensis ad ensem (2/1), suam efficit operationem (2/1), operationes et consuetudines (2/1), quorum proprietas est ut (5/1), in civitatibus et gentibus (2/3)	
Isaac Israeli, *On Definitions*	reliquarum (3/1), firmat (3/2), vivo (2/1), falso (2/1), intellectualiter (2/1), post quietem (7/1), exitum eius (3/1), scientiam totius (2/1), definierunt eam (2/1)	effectum (3/2)

In the common ground of the two translations of Alfarabi's *De scientiis*, there is overwhelming evidence for terms and phrases of Gerard of Cremona that are untypical of Gundisalvi. This is very clear evidence that Gerard was the first to translate *De scientiis* into Latin and that Gundisalvi revised the translation by thoroughly rewriting some passages, while leaving other passages untouched.

In the case of Isaac Israeli's *On Definitions*, there is also a good number of Gerardian phrases in the common ground, but only one Gundisalvian phrase. This makes it likely that Gerard's translation was first, and that this is indeed the case will be shown in the third step below. The vocabulary of Alkindi's *On the Intellect*, on the other hand, does not yet offer us any clues.

(3) In a third step, the textual basis for stylistic analysis is narrowed down again. The search is now for phrases in the common ground that appear also in the isolated versions of Gerard or Gundisalvi, regardless whether they are employed elsewhere by the two translators. The idea is to single out all those phrases that appear in the common ground, but only in one of the two isolated versions, that is, either in Gerard's or Gundisalvi's version. For this purpose, single words are ignored because their number is too massive. Two-word phrases with *et* are not recorded either. Moreover, only those phrases are considered which appear at least two times in an isolated version for Alkindi and Isaac Israeli. In the case of Alfarabi's *De scientiis*, there is so much material already for phrases appearing at least three times that I do not record phrases that appear two times. The result is the following:

Gerard's three versions compared against Gundisalvi's three versions

	Gerard of Cremona: stylistic evidence from Gerard's isolated text in the common ground	Dominicus Gundisalvi: stylistic evidence from Gundisalvi's isolated text in the common ground
Alkindi, *On the Intellect*	ex parte (2 occ. in Gerard's isolated text/2 occ. in the common ground)	est in (4/5), in anima (3/13), quod est (2/4)
Alfarabi, *On the Sciences*	ex eis (24/8), sunt in (19/7), in quibus (15/3), est possibile (15/1), est sicut (12/2), ab eis (10/3), in lineis (10/1), proprietas est (10/2), de eis (9/1), est illa (9/1), in omnibus (9/1), quorum proprietas (9/1), est verum (8/1), quibus rebus (8/2), in omni (7/1), ad illud (7/3), quod sunt (7/7), in civitatibus (7/3), in unaquaque (6/3), in ea (6/3), ut non (6/1), ut sint (6/2), eis cum (6/1), hoc nomine (6/1), ergo sunt (5/1), in illa (5/1), secundum modum (5/1), per	est proprium (4/1), de dictionibus (3/2), libro qui (3/1), ut in (3/1), in naturalibus (3/1)

Gerard's three versions compared against Gundisalvi's three versions (*cont.*)

	Gerard of Cremona: stylistic evidence from Gerard's isolated text in the common ground	Dominicus Gundisalvi: stylistic evidence from Gundisalvi's isolated text in the common ground
	eas (5/3), secundum viam (5/1), ei quod (5/1), in summa (4/3), cum quibus (4/1), in esse (4/1), in unoquoque (4/1), quo est (4/1), in utrisque (4/1), in scientiis (4/1), cum eis (4/1), una est (4/2), in qua (4/2), est eius (4/2), corporum naturalium (4/1), dictionum significantium (3/1), dictionum simplicium (3/1), deinde inquirit (3/2), in fine (3/1), an sint (3/6), eis quod (3/1), dat regulas (3/5), secunda est (3/2), eam apud (3/1), ex quo (3/2), in sententiis (3/1), non erit (3/2), non erret (3/1), in anima (3/6), sermones quidem (3/1), a quo (3/2), sciat quibus (3/1), in sermonibus (3/1), de omnibus (3/2), accidunt eis (3/4), sit modus (3/1), eorum in (3/1), eis per (3/1), quod est in (11/5), illud quod est (5/3), in civitatibus et (4/3), consuetudines et habitus (4/1), in quo est (3/1), ad illud quod (3/2), estverum et (3/1), et sermones quidem (3/1), et quibus rebus (3/1), ad invicem et (3/1), quorum proprietas est ut (5/1), quod non est verum (4/1)	
Isaac Israeli, *On Definitions*	est quod (10/3), est ut (7/1), illud quod (7/1), post quietem (7/1), quae sunt (6/3), est sermo (6/1), ab eis (5/1), manifestum est (5/1), est hoc (4/1), nisi cum (4/1), quod in (4/1), enim quod (4/1), cum non (3/2), secunda est (3/1), ita sit (3/1), tunc iam (3/2), sermo in (3/1), cum enim (3/1), exitum eius (3/1), est in (3/6), non sit (3/1),	duobus modis (8/1), sed non (2/1)

Gerard's three versions compared against Gundisalvi's three versions (*cont.*)

Gerard of Cremona: stylistic evidence from Gerard's isolated text in the common ground	Dominicus Gundisalvi: stylistic evidence from Gundisalvi's isolated text in the common ground
in qua (3/1), veritas est (3/1), in ipso (3/2), in omni (2/1), in homine (2/1), ex propriet-ate (2/3), tertia est (2/1), exsistens in (2/2), est sicut (2/3), scientiam totius (2/1), ex eis (2/2), essentiam suam (2/1), eorum est (2/1), factus est (2/1), in ea (2/2), in causato (2/1), ad aliud (2/3), et propter hoc (6/9), manifestum est quod (2/1), cum non sit (2/1)	

While the evidence for Alkindi's *On the Intellect* remains inconclusive, the comparison of the isolated versions against each other leaves no doubt about the priority of Gerard's translations of Alfarabi's *On the Sciences* and Isaac's *On Definitions*. The common ground of Alfarabi and Isaac is full with vocabulary from Gerard's isolated version, but it hardly ever resonates with the vocabulary of Gundisalvi's isolated version. Apparently, Gundisalvi left much material in these two translations intact when revising Gerard's version.

   In order to know more about Alkindi's *On the Intellect*, we have to return to the close reading of the text which we started above when analyzing the usage of *ex parte* and *secundum quod sunt*. Another noteworthy difference between the two versions is Gerard's and Gundisalvi's rendering of the Arabic *waqaʿa taḥta*, 'falling under', i.e., the senses or the intellect. Gerard translates with *cadere sub*, Gundisalvi with *subiacere*:

	Gerard of Cremona	Anonymous (Gundisalvi)
1	dixit enim	
2		|Aristoteles
3	quod forma est duae formae quarum una est habens materiam et	
4		|illa

(*cont.*)

	Gerard of Cremona	Anonymous (Gundisalvi)
5	est	
6	illa|	
7	quae	
8	**cadit sub** sensu sed|**subiacet** sensui et	
9	altera est illa quae non habet materiam et	
10	|illa	
11	est	
12	illa|	
13	quae	
14	**cadit sub** ratione|**subiacet** intellectui	
16	et	
17	|illa	
18	est specialitas rerum et	
19	|id	
20	quod est supra eam	
21	|scilicet generalitas rerum	
22	et forma quidem quae est in materia	
23	est|	
24	actu	
25	|est	
26	sensata quoniam si non esset actu sensata non **caderet sub** sensu cumque	
27	adquirit|apprehendit	
28	eam anima tunc ipsa est in anima	

This passage again speaks in favour of Gerard being the first translator and Gundisalvi being the reviser. For Gerard's phrase *cadere sub* is once retained in the common ground (line 26). The most natural explanation is that Gundisalvi twice changed the text into *subiacet*, but once left it untouched. Particularly telling is the three-word phrase *cadere sub sensu* for Arabic *waqaʿa taḥta al-ḥiss*, 'falling under the senses', which Gerard also uses in line 8 (*cadit sub sensu*). This phrase is highly distinctive of Gerard of Cremona in all Arabic-Latin translation literature, as far as I can see by searching through the *Arabic and Latin Glossary*[27] and the *Arabic and Latin Corpus* on the University of Würzburg website.

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27   Hasse et al. 2009–.

At present, I only know the phrase from Gerard's translations of the *Liber de causis* (where it appears twice), of Aristotle's *De caelo* (1) and of Alkindi's *De quinque essentiis* (1). It is highly probable, therefore, that Gerard is the author of the common ground and thus of the first translation of Alkindi's *On the Intellect*.

Another example of Gerardian language left untouched in the common ground is the phrase *inventus/-a/-um est*, which translates the Arabic *mawğūd*, 'existing'. The translation of this Arabic term with forms of *inveniri* is motivated by the literal meaning of the root *wağada*, which means 'to find', 'to encounter'. This translation of *mawğūd* is non uncommon in the Middle Ages, as is recorded in the *Arabic and Latin Glossary*: it is used, for example, by John of Seville, Alfred of Shareshill and the Burgos translators of Avicenna. In the present translation of Alkindi's *On the Intellect*, Gundisalvi translates *mawğūd* with forms of *esse* in four passages where Gerard employs *inventus est*. But in two passages *inventus est* is left unchanged. It is true that *inventus est* is not an exclusively Gerardian term, and, hence, the evidence is not as convincing as with *cadere sub sensu*. But it adds additional weight to the priority of Gerard's version.

A final example concerns the Arabic phrase *matā šā'a*, 'whenever it wants', which appears four times in our text. The first three occurrences are translated by Gerard as *quando vult, cum vult* and *quando vult*, where Gundisalvi writes *quando voluerit, cum voluerit* and *cum voluerit*. The fourth occurrence, however, is left unchanged by the reviser and appears as *quando vult* in the common ground. Again, this is Gerard's phrase, not Gundisalvi's.

In view of all this evidence for the common ground, which includes the highly characteristic phrase *sunt res una* mentioned above and the Gerardian vocabulary *ex parte*, *cadere sub*, *inventus est* and *quando vult*, it is safe to conclude that Alkindi's *On the Intellect* was translated first by Gerard and later revised by Gundisalvi. The case of Alfarabi's *On the Sciences* and Isaac's *On Definitions* is even more definite: given the enormous amount of Gerardian vocabulary in the common ground and the dearth of Gundisalvian vocabulary, even if we consider the isolated Gundisalvi versions, one can conclude with great certainty that Gerard's renderings of Alfarabi's and Isaac's text were first.

3   Was the *Liber de causis* Revised by Dominicus Gundisalvi?

After all this, we are in a better position to answer the question of whether Gerard's translation of the *Liber de causis* was revised by Gundisalvi. We have learnt from the three examples of double translation that Gundisalvi is a thor-

ough reviser of Gerard's translations—to an extent that we can still recognize his style in the revision. Is this the case too with the *Liber de causis*, in the form edited by Adriaan Pattin?

As to the style of Gerard of Cremona himself, there are many phrases distinctive of him in the *Liber de causis* translation. If the translation had been anonymous, we would have had no problem assigning it to Gerard of Cremona. Among those stylistic phrases of two words or more which serve to distinguish Gerard's translations from Gundisalvi's and which appear in at least 80% of his philosophical translations and at least 10 times, the following are in the *Liber de causis*: *et ipsius (3), inter utraque (1), per hunc (1), quoniam quando (1), similiter quando (1), et propter illud (3), et nos quidem (3), et causa in (1), eius et ipsius (1), et illud quidem (1)*. These terms contribute to the very "Gerardian sound" of the translation.

As to Gundisalvi, the probability that he revised the *Liber de causis* can be estimated best if we compare the traces of his vocabulary in the *Liber de causis* translation with the traces in the three double translations discussed above. For this purpose, I have searched for Gundisalvian phrases of two words and more which differentiate Gundisalvi's translations from Gerard (not from the other twelfth-century translators) and which appear in at least 80% of his philosophical translations and at least 10 times:

Gundisalvi's vocabulary differentiated from Gerard's vocabulary

	Dominicus Gundisalvi **stylistic phrases found regularly and often in Gundisalvi's translations, but not in Gerard's**[28]
Alkindi, *De intellectu et intellecto* (length: 805 words)	quantum ad (1), et id (1), non erat (1), est in potentia (2), et id quod (1), quod est in potentia (1)
Alfarabi, *De divisione scientiarum* (length: 6900 words)	et ideo (1), et deinde (1), ob hoc (2), nec in (3), alio modo (1), vel ex (1), et ob (2), ad illam (1), eorum non (1), hoc totum (2), id de (1), autem fuerint (1), omnibus illis (1), modo in (2), et multa (3), et ob hoc (2), si autem fuerint (1), ut per hoc (1), et hoc totum (2), et haec sunt (1)

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28   The Gundisalvian terms are listed in decreasing frequency of occurrence in his oeuvre for two-word, three-word and four-word phrases respectively.

Gundisalvi's vocabulary differentiated from Gerard's vocabulary (*cont.*)

	Dominicus Gundisalvi **stylistic phrases found regularly and often in Gundisalvi's** **translations, but not in Gerard's**
Isaac Israeli, *De diffinitionibus* (length: 4452 words)	sine dubio (1), et ideo (4), quicquid est (2), et deinde (4), et quicquid (2), ob hoc (7), postquam autem (1), ad modum (1), ideo non (1), unde non (1), et ob (6), est vel (3), nihil aliud (1), alicuius rei (1), dicitur esse (1), quod agit (1), in tantum (1), cum suis (1), eius natura (1), ad id quod (2), et ob hoc (6), et ideo non (1), quicquid est in (1), ut per hoc (1), in tantum quod (1), ad id quod est (1)
Ps.-Aristotle, *Liber de causis* (length: 7194 words)	esse cum (1), unde non (1), eorum non (2), quod agit (1), cum suis (1)

We can see here that Gundisalvi's style remains recognizable in his revisions. In the translations of Alfarabi and Isaac Israeli, one can find very distinctive three-words phrases such as *et ob hoc* or *in tantum quod*. And even the very short text *On the Intellect* by Alkindi contains some phrases that clearly distinguish the revision from Gerard's version. The *Liber de causis*, in contrast, is longer than even Alfarabi's *On the Sciences* (in Gundisalvi's version), but contains only some stray traces of Gundisalvian vocabulary. If Gundisalvi had revised the text in a way similar to the other three revisions, he would have left many more stylistic traces in such a long text. It is therefore very unlikely that Gundisalvi revised the *Liber de causis*.

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