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**The *Liber primus naturalium*,
i.e. the *Physics* of the Avicenna latinus***

I. AN INCOMPLETE TRANSLATION IN TWO PHASES

The medieval Latin translation of Avicenna's *al-Samā' al-ṭabī'ī* of the *Šifā'* is of a very particular kind insofar as it has been realized in two different phases, separated from one another by almost a century. The first phase of the translation can with certainty be related to twelfth century Toledo, most likely the circle of Gundissalinus. However, one looks in vain for any dedication or any note that specifies the name(s) of the translator(s). Marie-Thérèse d'Alverny, on the basis *inter alia* of the vocabulary used, tentatively proposed to date this translation at the third quarter of the twelfth century, and Van Riet, with due prudence, has accepted this proposal¹. This first phase of the translation of Avicenna's *Physics* — in what follows I will simply designate it as the 'Toledo translation' — covers the first and second treatises (*maqāla*), as well as the very beginning of the third treatise, i.e. the first chapter ('Prologus' in the Latin translation) and part of chapter two (chapter one in the Latin)². It is quite perplexing that the Toledo translation stops unexpectedly, namely in the middle of an exposition, more precisely after having covered approximately one fourth of the second chapter³. As to the reason why it so suddenly stopped, one can only speculate.

* I wish to thank Amos Bertolacci for his critical remarks that helped to substantially improve both the style and the content of this paper.

¹ AVICENNA LATINUS, *Liber primus Naturalium. Tractatus primus. De causis et principiis naturalium*, ed. S. VAN RIET. Introduction doctrinale par G. VERBEKE, Peeters - Brill, Louvain-la-Neuve - Leiden 1992, p. 53*, where in a footnote reference is given to M.-T. D'ALVERNY, *Notes sur les traductions médiévales d'Avicenne*, « Archives d'Histoire doctrinale et littéraire du Moyen Âge », 19, 1952, pp. 337-358, p. 344.

² The translation of the first two treatises is already available in a critical edition, see AVICENNA LATINUS, *Liber primus Naturalium. Tractatus primus. De causis et principiis naturalium* cit., and AVICENNA LATINUS, *Liber primus Naturalium. Tractatus secundus. De motu et de consimilibus* ed. S. VAN RIET[†], J. JANSSENS, A. ALLARD. Introduction doctrinale par G. VERBEKE, Académie Royale de Belgique, Bruxelles 2006.

³ In the forthcoming edition of the Latin translation of the third treatise of the *Physics*, it covers 62 out of 227 lines, see AVICENNA LATINUS, *Liber primus Naturalium. Tractatus tertius. De his quae habent naturalia ex hoc quod habent quantitatem*, ed. J. JANSSENS, Académie Royale de Belgique, Bruxelles, 2017 (in print). Parts of this paper are inspired by the Introduction that I wrote to this edition.

One might think of the sudden death of the translator, or maybe of one of the two collaborators in the case in which a team was at work (as was unambiguously the case with regard to the translation of Avicenna's *De anima*), but in the actual state of affairs this is at best a reasonable hypothesis, no more⁴.

Almost one century later, the translation of the third treatise was continued at Burgos, starting from the very point where the Toledo translation had stopped. After chapter 9 (= 10 in the Arabic editions), it affirms: «Explicit Liber Sufficientiae Phisicorum Avicennae translatus a magistro Johanne Gunsalvi de Burgis et Salomone de arabico in latinum, ad preceptum Reverendissimi Patris ac Domini, Don Gunsalvi, episcopi Burgensis, quae est civitas in Hispania». According to this note the translation was ordered by bishop Don Gunsalvi, i.e., Ganzalo García Gudiel. Since this latter was bishop of Burgos from 1275 till 1280, the translation can be dated as belonging to that very period⁵. As to the identity of the two translators, of whom the names are given in the preface, nothing cannot be said with certainty, excepted for the fact the 'Salomon' was in all likelihood a Jew⁶.

But also the Burgos translation does not cover the complete *al-Samā' al-ṭabī'ī* of Avicenna's *Ṣifā'*. In fact, it omits to translate the last four chapters of the third treatise, as well as the complete fourth treatise. This latter is entitled in Arabic: «On the accidents of these natural things and their mutual relations, as well as the things that are attached to them»⁷. It is largely inspired by Aristotle's *Physics*,

⁴ J. JANSSENS, *The Physics of the Avicenna latinus and Its Significance for the Reception of Aristotle's Physics in the West*, in A. VAN OPPENRAAY ed. with the Collaboration of R. FONTAINE, *The Letter before the Spirit: The Importance of Text Editions for the Study of the Reception of Aristotle*, Brill, Leiden - Boston 2012 (ASL, 22), pp. 311-330, especially p. 312. Regarding the collaboration between two persons (i.e., Dominicus Archidiaconus and Avendeuth Israelita) in translating the *De anima*, as mentioned in a preface, which is present in the majority of manuscripts offering the text of Avicenna's *De anima*, see AVICENNA LATINUS, *Liber de Anima seu Sextus de Naturalibus* I-III, ed. S. VAN RIET. Introduction doctrinale par G. VERBEKE, Peeters - Brill, Louvain - Leiden 1972, pp. 98*-105*. Van Riet (*ibid.*, p. 101*) qualifies Avendeuth Israelita as a 'mysterious person'; however, scholars now more and more agree that Avendeuth refers to the Jewish philosopher Ibn Daud, see e.g., C. BURNETT, *Arabic into Latin: the reception of Arabic philosophy into Western Europe*, in P. ADAMSON, R. TAYLOR eds., *The Cambridge Companion to Arabic Philosophy*, Cambridge University Press, Cambridge 2005, pp. 370-404, p. 380.

⁵ See the seminal paper of M. ALONSO ALONSO, *Homenaje a Avicena en su milenario: Las traducciones de Juan González de Burgos y Salomon*, «Al-Andalus», 14, 1949, pp. 291-319, esp. pp. 308-310; see also AVICENNA LATINUS, *Liber tertius Naturalium. De generatione et corruptione*, ed. S. VAN RIET. Introduction doctrinale par G. VERBEKE, Peeters - Brill, Louvain-la-Neuve - Leiden 1987, pp. 67*-68*.

⁶ ALONSO ALONSO, *Homenaje a Avicena en su milenario* cit., p. 310.

⁷ AVICENNA, *The Physics of The Healing, Books I-II, III-IV*, A parallel English-Arabic text translated, introduced, and annotated by J. MCGINNIS, Brigham Young University Press, Provo, Utah 2009 (Islamic Translation Series), p. 402 (English translation slightly modified).

but it contains now and then important developments or innovative ideas, as evidenced by Avicenna's conceptions of 'intermediary rest' and inclination (*mayl*), and by his attribution of a proper space (*hayyiz*) to each body⁸. As to the last four chapters of the third treatise, they deal with different topics: the eternity of motion and time, in spite of their being preceded by the essence of the 'Creator'; the existence, or not, of *minima naturalia*; and the discussion of the topic of 'directions'. The first of them, i.e., the eternity of motion and time, is an eminently Aristotelian idea. In the added reference to the precedence of the essence of the 'Creator', one cannot but detect an allusion to Aristotle's argument of the 'Unmoved Mover'. Concerning the affirmation of '*minima naturalia*', Avicenna, as he does for other physical realities, goes far beyond Aristotle, who only had offered a very basic, 'embryonic' theory with regard to them⁹. As to the topic of directions, it is not discussed by Aristotle in his *Physics*, but in his *On Heavens*, II, 2: in this case, Avicenna's exposition is largely indebted to Aristotle's¹⁰.

Surveying the totality of the omitted parts, one detects in them many doctrines and ideas that remain closely in line with Aristotle's point of view, but also several original, substantially innovative developments. However, such two-fold characterization applies, without discussion, to the totality of Avicenna's *Physics*. A good illustration thereof offers his discussion of motion in the second treatise. In that exposition, Avicenna takes over Aristotle's definition of motion — i.e. the perfection of what is in potentiality, as such — but he, perhaps under the influence of some of the Greek commentators, adds

⁸ Regarding the link between this treatise of Avicenna's work and Aristotle's *Physics*, see A. HASNAWI, *La Physique du Šifā': aperçus sur sa structure et son contenu*, in J. JANSSENS, D. DE SMET eds., *Avicenna and His Heritage*, Leuven University Press, Leuven 2002 (Ancient and Medieval Philosophy, Ser. I, vol. 28), pp. 67-80, pp. 68-69. As far as I now the notion of *hayyiz*, 'space', has not yet received any particular study, contrary to those of 'intermediary rest' and 'inclination', for which one can see respectively Y. T. LANGERMANN, *Quies media: A Lively Problem on the Agenda of Post-Avicennian Physics*, in N. BAYHAN ET AL. eds., *Uluslararası İbn Sînâ Sempozyumu. Bildiriler. International Ibn Sina Symposium. Papers II*, İstanbul Büyükşehir Belediyesi Kültür A. Ş. Yayınları, İstanbul 2009, pp. 53-67, and A. HASNAOUI, *La dynamique d'Ibn Sînâ (La notion d'inclination: mayl)*, in J. JOLIVET, R. RASHED (dir.), *Études sur Avicenne*, Les Belles Lettres, Paris 1984, pp. 103-123.

⁹ For the presence of the idea of '*minima naturalia*' in an embryonic state in Aristotle, see A. G. VAN MELSEN, *From Atomos to Atom*, Harper and Row, New York 1960, p. 44 (reference due to R. GLASNER, *Averroes' Physics. A Turning Point in Medieval Natural Philosophy*, Oxford University Press, Oxford - New York 2009, p. 144). J. MCGINNIS, *A Small Discovery: Avicenna's Theory of Minima Naturalia*, «Journal of the History of Philosophy», 53, 2015, pp. 1-24, clearly shows that Avicenna's doctrine is highly innovative compared to the expositions of his Greek predecessors on this issue.

¹⁰ HASNAWI, *La Physique du Šifā'* cit., p. 68.

the qualification 'primary' to the notion of 'perfection'¹¹. More significantly, and entirely new, is his acceptance — this time in sharp contrast with Aristotle and the whole tradition related to him — of the existence of 'motion' in the category of 'situs'¹². Since a clear desire to become better and fuller acquainted with Avicenna's physical view inspired the person (or persons?) who commanded to continue the Toledo translation, it is rather puzzling that the Arabic text has not been translated completely. Certainly, this time, there is no stop in the middle of a chapter, as was the case with the Toledo translation, but at the very end of a chapter, namely chapter nine (ten in Arabic) of the third treatise. In this chapter, Avicenna brings to an end what one could label his (systematic) exposition on the issue of finiteness/infinity, in other words a kind of 'corollary', i.e. a kind of systematic, and partly independent elaboration of Aristotle's exposition on this topic¹³. Did Moerbeke's new translation of Aristotle's *Physics* lead the translator(s) to consider Avicenna's work as no longer important, and hence as no longer worthy of translation? This looks highly improbable given that of Moerbeke's double revision of Jacques of Venice's old translation, the so-called

¹¹ See *Liber primus Naturalium. Tractatus secundus* cit., p. 151, lines 75-76. For the presence of this qualification in the commentators, see J. JANSSENS, *L'Avicenne latin: un témoin (indirect) des commentateurs (Alexandre d'Aphrodise-Thémistius-Jean Philopon)*, in R. BEYERS, J. BRAMS, D. SACRÉ, K. VERRYCKEN eds., *Tradition et traduction. Les textes philosophiques et scientifiques au moyen âge latin. Hommage à F. Bossier*, Leuven University Press, Leuven 1999 (Ancient and Medieval Philosophy, Ser. I, vol. 25), pp. 89-105, pp. 97-98 and A. HASNAWI, *La définition du mouvement dans la Physique du Šifā' d'Avicenne*, « Arabic Sciences and Philosophy », 11, 2001, pp. 219-255, especially pp. 224-226.

¹² *Ibid.*, pp. 197, lin. 91- 202, lin. 71.

¹³ Regarding Avicenna's rearrangement of Aristotle's *Physics* along thematic lines, which reminds one of the corollaries of such commentators as e.g., Philoponus and Simplicius, see J. JANSSENS, *Ibn Sînâ: An Important Historian of the Sciences*, in BAYHAN ed., *Uluslararası İbn Sînâ Sempozyum* cit., pp. 83-93, especially pp. 83-84. The proper discussion of finiteness/infinity covers actually the chapters 6-8 (7-9 of the Arabic editions), but this final chapter 9 in the Latin translation (=10 in the Arabic editions) remains somehow related to the finiteness/infinity thematic insofar as it discusses the possibility of finite/infinite potencies in bodies — including the affirmation that nothing finite can have an infinite force, see HASNAWI, *La Physique du Šifā'* cit., p. 68. This kind of approach to a specific problem related to Aristotle's *Physics*, but placed in a broader historical perspective and treated in a manner that is only loosely based on Aristotle's very wording, had in late Greek thought two major examples, i.e. Philoponus (see his *Corollaries on Place and Void* [with Simplicius, *Against Philoponus on the Eternity of the world*], translated by D. FURLEY [and C. WILDBERG], Duckworth, London 1991, pp. 13-94) and Simplicius (see his *Corollaries on Place and Time*, translated J. O. URMSON, Duckworth, London 1992). Although Avicenna's approach is not completely identical with theirs, there exist, nevertheless, many common elements, as e.g., the systematic treatment of a given topic and the detailed attention to all previous existing doctrines. It would be worthwhile to make a more in-depth comparison between Avicenna, on the one hand, and Philoponus and Simplicius, on the other, but this clearly exceeds the limits of the present paper.

‘translatio vetus’, only the first minor revision became widespread¹⁴. Moreover, as shown by Roger Bacon’s *Questiones alterae super libros Physicorum* and Albert the Great’s commentary on Aristotle’s *Physics* (both dated ca. 1250), in the middle of the thirteenth century there existed already a serious familiarity with Aristotle’s work. Hence, it is highly doubtful that Moerbeke’s translation had such a doctrinal significance as to abate suddenly the original interest in Avicenna’s work, an interest that unmistakably existed when the translation project in Burgos was started. Therefore, a more plausible explanation is perhaps that the stopping of the translation at that precise point — namely just before a chapter where the eternity of time, together with the qualification of (or, at least, allusion to) God as Unmoved Mover, is affirmed — is intimately related to the famous Parisian condemnation of 1277¹⁵.

II. INFLUENCE OF THE LATIN TRANSLATION OF AVICENNA’S *PHYSICS*

Whether the part translated at Burgos ever had influence on the Latin West cannot be totally excluded, but I looked so far in vain for any concrete trace of such influence¹⁶. However, it seems that there existed a real interest

¹⁴ J. BRAMS, *Les traductions de Guillaume de Moerbeke*, in J. HAMESSE ed., *Les traducteurs au travail. Leurs manuscrits et leurs méthodes*, Brepols, Turnhout 2001, pp. 231-256, pp. 236-237. It is perhaps worthwhile to note that, besides Jacques of Venice’s translation, another Graeco-Latin translation (the so-called ‘Vaticana’, dated also twelfth century) and two Arabic-Latin translations (one by Gerard of Cremona, dated before 1187, and another by [in all likelihood] M. Scot, dated ca. 1220-1235) existed before Moerbeke started his first revision of Jacques of Venice’s translation in 1260.

¹⁵ I have already evoked this hypothesis in an earlier publication, see J. JANSSENS, *The Reception of Avicenna’s Physics in the Latin Middle Ages*, in A. VROLIJK, J. HOGENDIJK eds., *O ye Gentlemen: Arabic Studies on Science and Literary Culture in Honour of Remke Kruk*, Brill, Leiden 2007 (IPTs, 74), pp. 55-64 (but correct ‘chapter 11’ into ‘chapter 9’ at p. 57, lin. 17). MCGINNIS, *A Small Discovery* cit., p. 15, states in a somewhat similar way, but without any explicit reference to the 1277 condemnation: « Interestingly, the Latin translators of Avicenna’s *Physics* stopped translating the *Physics* at III.10 — no doubt in part, if not in full, because Avicenna provides some of his most thorough and trenchant arguments for the eternity of the cosmos there, a topic that the Church Schoolmen would have wanted to avoid ». Let me add that I am well aware of the multiple problems that still surround the exact nature and influence of the 1277 condemnation, see H. THIJSEN, *Condemnation of 1277*, in E. N. ZALTA ed., *The Stanford Encyclopedia of Philosophy* (Winter 2013), <<http://plato.stanford.edu/archives/win2013/entries/condemnation/>>.

¹⁶ From the different ‘libri naturales’ of Avicenna (besides *Physics* 3) that were translated at Burgos, i.e., *De caelo et mundo*, *De generatione et corruptione*, *De actionibus et passionibus*, and *Liber meteororum*, a direct use has only been discovered with regard to the *De generatione et corruptione*, namely in Ugo Benzi’s commentary on the first book of Avicenna’s *Canon medicinae*, see S. VAN RIET, *Le De generatione et corruptione d’Avicenne dans la tradition latine*, in J. THIJSEN, H. BRAAKHUIS eds., *The Commentary Tradition on Aristotle’s ‘De generatione et corruptione’*. *Ancient, Medieval and Early Modern*, Brepols, Turnhout 1999 (Studia Artistarum, 7), pp. 69-77, p. 73. So far, I only discovered vague indications for a possible use of the Burgos translation of Avicenna’s *Physics* 3 in Duns Scotus and Peter Olivi, see JANSSENS, *The Reception of Avicenna’s Physics* cit., p. 63.

in Avicenna's physical works in the Italy of the fifteenth century, because the only manuscript in which this translation has been preserved, i.e. ms. Vat. Urb. Lat. 186, is of humanistic type, and, moreover, has been in possession of the Duke of Urbino, Federico da Montefeltro (1422-1482)¹⁷. In addition, since the library catalogue of the Sorbonne of 1338 mentions all the parts of the natural books of Avicenna which had been translated at Burgos, it looks possible that those parts attracted the attention of some of the Sorbonne teachers, and maybe even of thinkers (theologians, physicians, or members of the *artes*-faculty) in wider circles in France, at least during the fourteenth century. As to the part translated at Toledo, it indeed had an influence, although not as important as that of the *De anima* or of the *Metaphysics*. The first traces of a possible use are present in the thought of Richard Rufus of Cornwall and Robert Grosseteste, but the evidence is somewhat thin. For a clear, explicit use one has to wait until the middle of the thirteenth century, more precisely until the commentaries on the *Physics* by such authors as e.g., Adam of Bockfeld, Roger Bacon, Thomas Aquinas, and, above all, Albert the Great¹⁸. But even in these later authors Avicenna's most innovative ideas were seldom accepted. For example, the acceptance of motion in the category of '*situs*' is systematically rejected by the Latin scholastics, whereas it became almost standard in the post-Avicennian tradition in the Islamic world¹⁹. Moreover, many Scholastics, as e.g., Albert the Great, combined elements taken from Avicenna's *Physics* with other ideas taken from Averroes' *Long Commentary on the Physics*, although these latter were not necessarily in agreement with Avicenna's view(s)²⁰.

III. TRANSLATION TECHNIQUES AND PARTICULARITIES

When one compares the manner of translating used in Toledo with that practiced in Burgos, one detects several common factors. The following list, although not exhaustive, enumerates a few of them: (1) (too) literal calques of the Arabic word order; (2) the use of '*ad sensum*' translations and of clarifying translations or additions; (3) the presence of omissions, mainly by *homoioleuton* (related to either the Arabic manuscript used, or misread, by the Latin translator,

¹⁷ See AVICENNA LATINUS, *Liber tertius Naturalium. De generatione et corruptione* cit., p. 66*.

¹⁸ For a more detailed survey, see JANSSENS, *The Reception of Avicenna's Physics* cit., pp. 57-62.

¹⁹ Regarding the reception of Avicenna's doctrine of motion in the Islamic world, see J. JANSSENS, *The Reception of Ibn Sīnā's Physics in Later Islamic Thought*, « *Ilahiyyat Studies* », 1 2010, pp. 15-36.

²⁰ A fine illustration thereof is present in A. HASNAWI, *Le statut catégoriel du mouvement chez Avicenne: context grec et postérité médiévale latine*, in R. MORELON, A. HASNAWI eds., *De Zénon d'Élée à Poincaré. Recueil d'études en hommage à Roshdi Rashed*, Peeters, Louvain - Paris 2004 (Les Cahiers du MIDEO, 1), pp. 607-622, especially pp. 611-614.

or to the transmission of the translation, or of uncertain origin — be it the Arabic model or the transmission of the Latin translation), but sometimes intentional (due to an obvious ‘redundancy’ in the Arabic text, typical of the pompous style of the Arabic language); (4) the use of typical medieval Latin words, or the specific medieval understanding of already existing words; (5) the rendering of a plural by a singular, and of an active by a passive — or vice-versa; (6) mistaken translations resulting from a confusion between two Arabic words of similar graphic, or even of identical graphic, especially insofar as one cannot exclude the possibility of the (at least, partial) absence of diacritical points in the manuscript that figured as model for the Latin translation; and (7) the translation of a single Arabic word by a composed expression. Given the specific importance of this last phenomenon, I will devote a more detailed discussion to it under a separate heading (see section IV, below).

Regarding these common translation techniques and particularities, I here offer a few concrete examples²¹:

(1) *Literal calques of the Arabic*

A typical element of the Latin translation of the *Physics* is the habit of making a calque of the Arabic sentence, even in cases where this does not comply with the standard requirements of the Latin language. This phenomenon is attested on several occasions, see e.g.: (a) Tr. II, cap. III, p. 194, lin. 33-35: «(et hoc quod dixerunt), quod duritiei et mollitiei non est unum subiectum et potentiae et impotentiae, (destruitur ...)», which literally mirrors the syntax of the Arabic sentence *inna al-mawdū‘ laysa wāḥidan li-l-ṣalāba wa-l-līn aw al-quwwa wa-l-ḍu‘*²² — normally one would have expected the Latin to repeat ‘et non est unum subiectum’ before ‘potentiae et impotentiae’ or move ‘non est unum subiectum’ before ‘durietei et mollitiei’; (b) Tr. III, cap. III, p. 418, lin. 7-8: «Dicamus igitur opinionem (dicentis corpus in se habere partes in effectum infinitas) iam patet sua dissolutio», corresponding to the Arabic *ammā madḥab al-qā’ il (...) fa-yazharu buṭlānuhū* — in Latin one would expect: «dicamus igitur quod dissolutio opinionis ... iam patet». In spite of the use of syntactical calques from the Arabic, the Latin translator, however, does not hesitate at other occasions to fully take into

²¹ In what follows, I will only provide instances taken from Tractatus II with regard to the Toledo translation and Tractatus III with respect to the Burgos translation. In the former case the pagination and line number(s) refer to the critical edition, i.e. AVICENNA LATINUS, *Liber primus Naturalium. Tractatus secundus* cit.; in the second to the forthcoming edition, i.e. AVICENNA LATINUS, *Liber primus Naturalium. Tractatus tertius* cit.

²² The conjunction ‘et’, instead of ‘nec’, in the sentence ‘et potentiae ...’ in the Latin translation of this passage results probably from the frequent confusion between *aw* and *wa-* in Arabic.

account the specificities of the Latin language compared to those of the Arabic. In this respect, I may mention: Tr. II, cap. IX, p. 290, lin. 8-9, where the Latin translator adds the words 'ideo debeat' inside the following affirmation: «Nec quia accidens indiget subiecto ex hoc quod est accidens, ideo debeat subiectum eius esse accidens», even if they have no direct counterpart in the Arabic text.

(2) *Translations ad sensum, and clarifying translations or additions*

Some translations can be qualified as suited to the context, in spite of their being not strictly literal, e.g. (a) Tr. II, cap. I, p. 173, lin. 33-35: «Motum autem pendere ab eo in quo est secundum quod est in aliquot praedicamentorum, non concedimus esse subiectum eius», in the context of an affirmation where Avicenna states that the motion's dependence upon one of the categories in which there is motion, does not refer to the motion's subject — Arabic: *wa-ammā ta'alluq al-ḥaraka bi-mā fihi l-ḥaraka min al-maqūlāt fa-laysa ya'nī bihi al-mawdū' lahā*; and (b) Tr. III, cap. III, p. 432, lin. 178-179: «et hoc totum est certum quia intellectus videt quod est possibile» for «*wa-ḡāmī 'u ḡālīka ṣaḥīḥu ḡawāzi l-wuḡūdi fī l-'uqūl* (but the Latin translator read in his model probably *fī l-'aql*)», «and the possibility of the existence of all that is truly present in the intellects», or, less literally, with McGinnis: «all of which can, in fact, exist in the intellect (reading *fī l-'aql* instead of *fī l-'uqūl*)»²³.

On several occasions the Latin translation makes explicit what is vaguely referred to in the Arabic text, e.g. (a) Tr. II, cap. I, p. 162, lin. 49: the vague Arabic term *ṣay'* has been replaced, in full accordance with the context, by the more precise 'motu'; and Tr. III, cap. IV, p. 449, lin. 45-46: what the Arabic text affirms in a very general way, namely «if it is not the case» (*idā lam yakun*) is rendered in the Latin in a much more precise way, i.e. «cum <non> habuerit signationem»; (b) Tr. II, cap. XII, p. 346, lin. 77: the affixed pronoun *-hu* of the expression *fihi* is correctly made explicit in the Latin translation 'in cursu' as signifying 'cursus' (even if one would expect in the Arabic text a reading *fihā* instead of *fīhi*²⁴); and Tr. III, cap. III, p. 438, lin. 240: 'ipsum movere' offers a correct and precise translation for the affixed pronoun *-hā*.

Finally, now and then the Latin translation has an additional word or expression that does not directly correspond with any word in the Arabic text, but contributes to a better understanding of a given sentence in its broader context, as a clarifying addition, e.g. Tr. II, cap. X, p. 312, lin. 28: in the framework of the statement: «(Ergo secundum eos aliquando tempus est...), aliquando

²³ AVICENNA, *The Physics of The Healing*, Books III-IV cit., p. 293.

²⁴ See J. MCGINNIS, *Ibn Sīnā on the Now*, «American Catholic Philosophical Quarterly», 73, 1999, pp. 73-106, p. 81, note 22.

est sine motu (et tunc vocabitur Arabice adahr)», the Latin translation, in translating *muğarradan*, «separate», by ‘sine motu’, makes clear which precise kind of separation is implied, i.e. separation from motion; and Tr. III, cap. I, p. 388, lin. 76: the Latin translators have added the specification ‘a tactu’ to the notion ‘vacuum’ inside the expression ‘vacuum ... in una parte’ (which, as such, is a literal translation of the Arabic expression *farağa min ğihatin*).

(3) Omissions

Many of the attested cases of omission belong clearly to the genre of ‘omission by *homoioteleuton*’. Sometimes, one can impute these omissions with relative certainty to one of the two traditions — the Arabic or the Latin. Illustrative of such cases are e.g., Tr. II, cap. III, p. 188, lin. 36-37, where the omission of the sentence «esset ei mobile quod habuerit esse» in all likelihood is related to an accident of the transmission of the Latin translation, because the Arabic text, having namely *mawğūda ... mawğūd*, does not offer a proper omission by *homoioteleuton* (and, moreover, without the initial presence of the omitted sentence in the Latin translation, one can hardly explain the preservation of the qualification ‘illud’, Ar. *ḍālīka*, with respect to ‘mobile’ in the phrase «illud mobile» that follows immediately afterwards)²⁵; and Tr. III, cap. IV, p. 456, lin. 141: in view of the Arabic text, where one reads: *wa-l-nuqaṭ mutağāwira*, one would have expected in the Latin translation the addition of «et puncta convicinantur» after the previous «convicinantur». The omission is clearly a case of omission by *homoioteleuton* — in principle it can be linked with both the Arabic and the Latin tradition, but, given its attestation in the Arabic tradition, it becomes highly probable that the omission was present in the Arabic manuscript that the Latin translators had at their disposal²⁶.

However, it is sometimes impossible to identify the exact origin of an omission of this kind, namely whether it lies in the transmission of the Arabic text, in an erroneous reading of the translator(s) himself (themselves), or in the transmission of the Latin translation. See e.g. Tr. II, cap. VII, p. 236, lin. 43: the sentence «(extrema) et quicquid est hoc spatium quod est inter duo extrema» (corresponding to Arabic: [*al-ṭarafayn*] *fa-kull mā huwa ḥādā l-bu’d alladī bayna l-ṭarafayn*) lacks in the Latin translation — the omission is clearly by *homoioteleuton*, but its origin can be situated either in the Arabic tradition (*al-ṭarafayn ... al-ṭarafayn*) or in the transmission of the Latin translation («extrema»

²⁵ The explanation that I gave in the edition, see AVICENNA LATINUS, *Liber primus Naturalium. Tractatus secundus* cit., p. 188 note 36-37, has to be corrected in the sense expressed here.

²⁶ See IBN SİNĀ, *Al-Şifā’*, *Al-Ṭabī’iyyāt*, *Al-Samā’ al-ṭabī’ī*, ed. S. ZĀYID, *Al-Hay’a al-Miṣriyya l-‘amma li-l-kitāb*, Cairo 1983, p. 202, note 2, where it is indicated that this omission is present in manuscript ‘b’ (= al-Azhar, Hikma 24, ḥuṣūṣiyya 331).

... «extrema»); and Tr. III, cap. V, p. 463, lin. 55-57: in the presentation of the doctrine of some authors, who seem to have thought that only in estimation an infinite division of motion can be imagined, one finds in the Latin the following sentence: «Sed si via habuerit terminum ..., motus habebit terminum in actu minorem motibus», in which, after «via», *masāfa*, nothing corresponds to the Arabic words *min haytu hiya masāfa*, printed, without any variant, in all editions, so that one would expect the explicit presence of «inquantum via» in the Latin translation. However, nothing permits to decide whether the omission is related to the transmission of the Arabic text (*masāfa ... masāfa*) or of the Latin translation («via» ... «via»), or, rather than being related to the transmission of either of them, it may result from a faulty reading by the translators themselves, who would have confused the second *masāfa* with the first, being thus guilty of the same mistake that many copyists had already made before them.

It is worthwhile to note that a few omissions seem to be due to a conscious choice by the Latin translator, who in all likelihood found the concerned sentence in the Arabic text redundant. See e.g. Tr. II, cap. XII, p. 336, lin. 53-54: after the statement: «esse autem instantis in hoc loco, hoc est ut sit extremitas temporis in quo toto ipsum non est», the Latin translation, when compared to the original Arabic text, omits the following (indeed, rather redundant) Arabic sentence *ka-annaka qilta innahū fī ʿarāfi l-zamāni alladī huwa ma 'dūm fīhi mawǧūd*, whose tentative Latin translation would be «sicut dixeris quod sit existens in extremitate corporis in qua ipsum est non existens»; and Tr. III, cap. V, p. 470, lin. 139: after «non dicent quod si [i.e., the point] esset distinctum quod moveretur per se ipsum», one finds no translation of what immediately follows in the Arabic text, i.e. *wa-lā maṭalan makān bi-dātihi*, «et quod haberet verbi gratia locum per se ipsum»; although at first sight this might look a case of omission by *homoioleuton* (of uncertain origin), the omitted part conveys nothing essential to Avicenna's argument, and therefore it seems possible, or even likely, that the translators have consciously omitted this short passage.

(4) Medieval Latin

On several occasions, one finds Latin words that, especially in view of the Arabic text, must certainly, or almost certainly, be understood in a sense that is totally absent from classical Latin, but is clearly accepted in medieval Latin sources. See e.g. Tr. II, cap. II, p. 185, lin. 66-67 ('praeposuiimus'): the verb 'praepondere' is used in the sense of 'to mention beforehand', and Tr. III, cap. II, p. 417, lin. 151 ('praefatorum'): 'praefatus' meaning 'above-said'²⁷.

²⁷ See *Mediae Latinitatis Lexicon Minus*, ed. J. F. NIERMEYER, Brill, Leiden - New York - Köln 1993, p. 835, respectively p. 830.

Now and then, one has to do with forms that are typical of, and sometimes even only exist in, medieval Latin sources, as e.g., Tr. II, cap. VI, p. 222, lin. 10-11: 'lagenam'²⁸, and III, cap. II, p. 414, lin. 125: 'scindibilia'²⁹.

(5) *Singular-Plural, Active-Passive*

Sometimes, the Latin translator(s) renders (render) a singular word by a plural, e.g., Tr. II, cap. I, p. 159, lin. 7: 'diversis' for *muḥtalif*, and Tr. III, cap. I, p. 398, lin. 170: 'partes' for *ḡuz* — or inversely, see e.g. Tr. II, cap. XII, p. 348, lin. 7: 'terminum' for *ḥudūd*, and Tr. III, cap. III, p. 438, lin. 237: 'mille' for *ulūf*.

Of a somewhat similar nature is the replacement of an active wording by a passive — see e.g. Tr. II, cap. IX, p. 298, lin. 29-30: 'et dilatatur earum corpulentia' for *fa-yanfasihu al-ḥaḡm*, where, however, a semantically passive seventh form of an Arabic verb is involved, and Tr. III, cap. VIII, p. 502, lin. 53: 'corrumpitur' for *abṭala* — or inversely, the passive singular third person of the perfect of the verb is translated by the active plural third person, see e.g. Tr. II, cap. I, p. 152, lin. 88 'dixerunt' for *qīla*, and Tr. III, cap. III, p. 430, lin. 155: 'aestimaverunt' for *fa-ḡunna*.

(6) *Faulty readings related to Graphical Similarity between Arabic Words*

Finally, in both phases of the translation, one finds instances where the actual Latin translation results form an obvious confusion between two Arabic words that are graphically close to each other, or sometimes simply identical (especially, in absence of diacritical points as was sometimes the case in ancient manuscripts). Classical examples are the confusion between *wa-* and *fa-*, *bi-* and *li-*, 'araḡ and *farḡ*, etc. I may here add a few other examples, which seem to be proper to the translation of our text: Tr. II, cap. IX, p. 277, lin. 10: *ḥāwī* ('vacua') and *ḥāwī* ('encompassing'): Tr. II, cap. XI, p. 322, lin. 28: *ḥayyiz* ('locum') and *ḡuz* ('part'); Tr. III, cap. II, p. 409, lin. 70: *ayyil* ('cervus') and *Aḥīl* ('Achilles'); Tr. III, cap. VII, p. 492, lin. 126: *muṭlaqan* (rendered into Latin as an adjective, i.e. 'absolutus') and *maṭlūban* ('searched').

However, compared to the Toledo translators, the Burgos translators are less strict in fixing a single translation for technical terms. For example, the Arabic term *mudāḥala* is translated inside one and the same paragraph by 'penetratio' (cap. I, p. 392, lin. 112), but also by 'infusio' (cap. I, p. 392, lin. 118). This terminological variety risks to create ambiguity, all the more since somewhat before in the same chapter at line 33, which still belongs to the Toledo phase of translation, the same term is translated as 'permisceri'. Another telling example

²⁸ *Ibid.*, p. 579.

²⁹ See *Dictionary of Medieval Latin from British Sources*, edd. R. E. LATHAM, D. R. HOWLETT, R. K. ASHDOWNE, Oxford University, London 1975 sqq., fasc. XV, p. 2968.

is present in chapter IX, where in less than ten lines, namely p. 522, lin. 159-167, *munāsaba* is translated by three different terms, i.e., ‘*comparatio*’, ‘*respectus*’ and ‘*dependentia*’. Finally, most illustrative of this fluctuation in terminological choices is the translation of the Arabic term *kamm*, which often — in the usual way — is rendered as ‘*quantitas*’, but sometimes, rather surprisingly, as ‘*mensura*’ (which normally translates the Arabic word *miqdār*). But, all in all, the similarities between both translations are greater than the dissimilarities.

IV. DOUBLE TRANSLATIONS

A most significant common element between the translations of both phases is undoubtedly the translation of one single Arabic word by two more or less synonymous Latin words, the so-called phenomenon of double translation. I have extensively dealt with this phenomenon in an earlier paper as far as the Toledo translation of the first two treatises is concerned³⁰. I there paid special attention to the manuscript Dubrovnik, Bibl. Dom, 20 (36-V-5), since it displayed many more double translations than any other manuscript. I documented that it testifies of double translations in several, different ways, i.e., by addition — either *supra lineam* or *in margine* — or by juxtaposition — either simple juxtaposition or a juxtaposition implying the use of a conjunction — of (more or less synonymous) terms; by rendering a single Arabic term by two different, not synonymous words, each of which however constitutes a possible translation; or by putting into parallel a literal and a less literal translation. I argued that the less literal rendering reveals a will to better ‘latinize’ the translation, or to make a given affirmation more understandable in its context. With regard to the transmission of the Latin translation, Van Riet already offered serious evidence for the existence of two families of manuscripts³¹. I therefore analyzed and discussed cases of double translation present in other manuscripts than the Dubrovnik, but which belong to the same family (according to Van Riet’s labeling, the ‘A-family’), and concluded, although with due prudence, that they in all likelihood were already present in the exemplar of the translator himself. Finally, I tried to show that the translations attested in the manuscripts of the family other than the one to which the Dubrovnik manuscript belongs (Van Riet’s ‘B-family’), and which can be qualified as alternative or double translation when compared to the A-family, do not necessarily result of a later revision of the Latin

³⁰ J. JANSSENS, *L’Avicenne latin : particularités d’une traduction*, in JANSSENS, DE SMET eds., *Ibn Sīnā and his Heritage* cit., pp. 113-129 (reprinted in J. JANSSENS, *Ibn Sīnā and his Influence on the Arabic and Latin World*, Ashgate, Aldershot, Hampshire 2006 [Variorum Collected Studies Series CS 843], XIV).

³¹ AVICENNA LATINUS, *Liber primus Naturalium. Tractatus primus* cit., pp. 54*-62*.

translation, as Van Riet had claimed. These alternative or double translations in the B-family turn out to be always more literal than the translations given in the A-family, and it is therefore likely that they represent the very first attempt of translation, since shifting from a very literal to a free translation is, in my view, the most natural way of making a translation (unless one starts with a rough draft, but this is never the case as far as the Avicenna latinus is concerned). Hence, if any revision took place, it was most probably in the ancestor of the A-family, namely with the aim of a better 'latinization'. Hence, I did not and I still do not see any serious reason to exclude that the common ancestor of all the surviving Latin manuscripts – the existence of which Van Riet also accepts – contained already these double translations (perhaps, in the margin or above the line).

This phenomenon of double translations is, as said, also present in the Burgos translation. Most of the times, one has the juxtaposition of two more or less synonymous terms, related to each other through a conjunction:

(1) *et*: cap. I, p. 391, lin. 101 «evidens et manifestum»: *bayyin*; cap. III, p. 426, lin. 101-102 «sequetur et eveniet»: *yağib*;

(2) *idest et*: cap. IX, p. 510, lin. 2 «recipiunt actionem idest et patiuntur»: *al-ta'attur* (the Arabic substantive is here translated by a verb);

(3) *atque*: cap. II, p. 415, lin. 138 «summatim atque omnino»: *bi-l-ğumlati*;

(4) (*non ...*) *nec* (or *neque*): cap. II, p. 414, lin. 122 «non impeditur nec defenditur»: *lā yağğib*; cap. II, pp. 415, lin. 131-132 «non sit divisum neque scissum»: *lam yanfaşil*; cap. IV, p. 446, lin. 11 «non esset opus nec oporteret»: *la-kāna lā yahtāğ*;

(5) *vel*: cap. II, p. 405, lin. 28 «obviatio vel oppositio»: *muḥādāh*; cap. VII, p. 498, lin. 212 «rimulam vel disruptionem»: *taḥalḥul*; cap. IX, p. 527, lin. 228 «impellens vel amovens»: *dāfi'an*;

(6) *aut (...)* *vel*: cap. II, p. 405, lin. 20-21 «aut per privationem causae secantis vel per absentiam divisoris»: *bi-sababi 'adami mā yuqsamu bihī*;

(7) *seu*: cap. I, p. 390, lin. 90 «vacua seu non tacta»: *fāriğ*; cap. II, pp. 407, lin. 49 «partem seu atomum»: *ğuz*';

(8) *sive*: cap. I, p. 401, lin. 211 «descriptio sive intentio»: *ma'nā*; cap. III, p. 428, lin. 116 «dentatus sive intercisus»: *muḍarras*.

One finds also occurrences of double translations where two more or less synonymous terms/expressions are juxtaposed without any conjunction: e.g., cap. II, p. 404, lin. 18 «verum etiam»: *bal*; cap. II, p. 414, lin. 119 «convenerunt concordaverunt»: *ağma'a*; cap. V, p. 466, lin. 85 «quia propter quod»: *wa-dālika li-anna*; cap. V, p. 474, lin. 179 «accidens quod advenit»: *al-āriḍ*; cap. VII, p. 492, lin. 123 «forsan possibile est»: *'asā an*. In two cases of adverbs, the two terms are somewhat separated in the text: cap. VII, p. 487, lin. 58-59 «adhuc (...)

postmodum»: *ba'du*; cap. VII, p. 496, lin. 189 «similiter (...) idem»: *ka-dālika*. In a similar way, the dual form of the Arabic word *ḍil'ayn* (cap. III, p. 427, lin. 105) is rendered by the two separated terms «duarum (...) ambarum».

Sometimes one has the impression that the two terms used are expressing a hesitation between two alternate, not fully synonymous translations: cap. I, p. 391, lin. 102 «ad solvendum et contradicendum»: *li-l-munāqaḍa* (the translator seems to have been hesitant between what in his view is the basic meaning of the Arabic root *n-q-ḍ* and the meaning of the actual Arabic term); cap. I, p. 395, lin. 143-144 «per infusionem et per fundationem»: *bi-njirāz* (here one could imagine that in the original translation the second of the two terms was 'indundationem', but the context does not totally exclude the reading 'fundationem'); cap. I, p. 401, lin. 208 «divisibiles in infinitum vel in semper divisibiles»: *taqbalu l-qismata dā'iman* (the first alternative is more 'ad sensum', the second 'ad litteram'); cap. II, p. 407, lin. 48 «non ipsi alii»: *al-āḥarīn* ('non ipsi' is a clearly alternative translation for the more common 'alii'); cap. IV, pp. 453-454, lin. 118-119 «in actu realiter»: *fī l-wuḡūd* ('realiter' looks as a kind of (alternative?) interpretative translation, since the same expression is translated somewhat later by only 'in actu'); cap. V, p. 464, lin. 67 «iuste sit verum»: *ṣaḥḥa* (one wonders whether one of the two terms, i.e., 'iuste' or 'verum', was originally not placed *supra lineam* above the other); cap. V, p. 464, lin. 68-69 «unus (...) distinctus»: *mufrad* ('unus' looks as a kind of (alternative?) interpretative translation, but note that one finds in the same context only 'unus' translating *mufrad*); cap. VIII, p. 506, lin. 92 «accidit sive convenit»: *ya'riḍu* (elsewhere in the chapter translated by the verb *competit/competat*, which is more or less synonymous with 'convenit').

A possible indication of what originally presented itself as a double translation can maybe be found in chapter III, p. 421, lin. 33-35, where it is stated: «Et fortassis quod pertransiremus hoc aut minime pertransiremus cum dependeat in alia natura alterius studii». The presence of 'alterius' could result from a double translation of the Arabic *bi-naw' āḥar min al-naẓar*: first, a very literal, «alia natura studii», then a more latinized: «natura alterius studii». Another indication for a possible double translation is present in chapter IV, p. 455, lin. 119-120, when Avicenna affirms: «et forsan quod non posset rotari supra ipsam [et est impossibile]». The final addition of 'et est impossibile' is somewhat problematic and therefore I have deleted it. However, it seems reasonable to suppose that in an earlier stage of the transmission of the translation, and, perhaps, already in the exemplar of the translator, one found the double translation 'non posset et esset impossibile' for the Arabic verb *istaḥāla*. A final, albeit less evident, case can be found in chapter IX, p. 520, lin. 135, where it is said: «quia hoc corpus sine dubio [non] est partibile et dividitur cum eo potentia». The negation 'non' is in contradiction with the original Arabic text. Therefore, I have simply deleted it

in the edition. However, by way of prudent hypothesis — in the actual state of affairs, the qualification ‘probable’ would clearly be too strong for the present case — one might imagine that this negation ‘non’ was followed in the original exemplar of the translators (or in an early copy of the original translation) by ‘est dubium’, thus constituting with ‘sine dubio’ a double translation of the Arabic expression *lā maḥāla*³².

Certainly, none of these cases permits to affirm with certainty that those double translations have been formulated by the translators themselves, rather than added later by one (or several) copyist(s). But, on the other hand, nothing excludes formally that they have been formulated by them.

V. A SPECIAL CASE: A DOUBLE COPY OF A PASSAGE

Special attention deserves a long passage of chapter IX that has been copied twice by the same hand³³. Somewhat surprisingly, one now and then finds minor variants, approximately forty in number, in the two versions. A large part of them can be explained by lack of attention: cases of mistaken readings, as e.g., ‘(corporis non) finitis’ instead of ‘(corporis non) finiti’ (p. 516, lin. 84), ‘(extra) haec (corpus)’ instead of ‘(extra) hoc (corpus)’ (p. 517, lin. 90), ‘(res ... non) dicunt (tarde esse)’ instead of ‘(res ...non) dicuntur (tarde esse)’ (p. 518, lin. 104), etc.; one case of repetition (‘iteravit’) and five cases of very limited omissions, namely the omission of one word, or at most of two words. However, this does not mean that the copyist was simply careless. He clearly tried to offer a copy as correct as possible, as becomes evident by the five cases of effaced additions (two of which belongs to copy A, three to copy B), as well as by the single case of marginal correction. Generally speaking, no systematic preference can be given to the readings of one of the two redactions. Indeed, a decision about which of the divergent readings has to be preferred had to be taken on the basis of the context and, of course, of the comparison with the original Arabic text. This analysis showed up that the undoubtedly correct reading was attested sometimes in the first version, some other times in the second. In the two cases of inversion, i.e., *aeque bene erit/erit aequae bene*; *numerus privatus/privatus*

³² The Arabic expression *lā maḥāla* is translated by both ‘sine dubio’ and ‘non est dubium’ (although never together) in other books of Avicenna’s *Physics* translated at Burgos, see for example, AVICENNA LATINUS, *Liber tertius Naturalium. De generatione et corruptione* cit., p. 177, N°. 165 and AVICENNA LATINUS, *Liber quartus Naturalium. De actionibus et passionibus*, ed. S. VAN RIET, Introduction doctrinale par G. VERBEKE, Peeters - Brill, Louvain-la-Neuve - Leiden 1989, p. 114, N°. 155.

³³ In what follows, I will designate them as copy A and copy B. In manuscript Vat. Urb. Lat., they cover ff. 79r9-80v10, respectively 80v10-82r25.

numerus, content and original Arabic text do not permit to exclude any of the two readings. These inversions might result from the translator's will to latinize the wording, or simply be due to the fact that he forgot to write a word, and judged that it could be added without being obliged to efface the already written word. Thus, all factors can be entirely related to the very activity of copying.

But there are three cases the explanation of which seems not so easily reducible to that very activity:

(1) The first concerns the addition in copy B, and in it alone, of the word 'orbium' to 'circulationes (festinae)' in the framework of the following affirmation: « Sed potest esse quod erunt in futuro res infinitae, sed quaedam minus quam aliae, sicut motus infiniti quidam sunt magis festinantes et quidam sunt motus infiniti tardiores, quia circulationes festinae sunt plures sine dubio quam circulationes lentae; et, eodem modo, decennarii infiniti sunt minus quam uni infiniti et plus quam centenarii et millenarii infiniti » (cap. IX, pp. 523, lin. 180-184). Having shown that in a finite body no infinite power can exist, Avicenna remarks that the number of non-existent future events is not necessarily finite. Indeed, as stressed in the above quoted passage, the number of infinite fast rotations is undoubtedly greater than that of infinite slow rotations. Now, as in the translation transmitted by copy A, the Arabic text does not explicitly specify the concerned rotations as proper of the celestial spheres ('orbium'), contrary to what copy B does. Given that 'infinite motions' are in fact limited to the supra-lunar world, it is quite natural to specify the mentioned rotations as rotations of the celestial spheres. But is the addition of this specification due to an initiative of our copyist himself? If this were the case, one would expect its presence in both copies. Since this is not the case, one might suspect that it has been added — either in the text itself (*supra lineam*?) or in the margin — earlier in Latin translation, maybe by the translator himself or by a previous copyist, but that after reflection, it was effaced. If this is the correct hypothesis, one can imagine that our copyist has taken into account the effacement when copying the first time the passage, but has overlooked it when he copied it a second time. Alternatively, it is also possible that the word 'orbium' was written in the margin — either in the exemplar of the translators or in a later copy — and never effaced afterwards, as a kind of indication that this affirmation was about the celestial spheres (taking into account that also in this lower, earthly world faster circulations are more numerous than slower circulations in a same stretch of time). If this is right, then our copyist would the first time have fully realized that this marginal addition was of a specifying nature, hence not present in the Arabic text, but, when copying a second time the translation, he would have thought that it was essential to the text. All in all, this explanation remains highly speculative and therefore is of little use in clarifying the relationship between our copy and the original translation.

(2) Of much greater significance are the two occurrences of the alternative 'igitur/ergo': in its first occurrence, one reads (cap. IX, p. 518, lin. 106) 'igitur' in copy A («[ponamus] igitur») and 'ergo' in copy B («[ponamus] ergo»), whereas the inverse is the case at the second occurrence («[iam] ergo» / «[iam] igitur», p. 524, lin. 195). It looks most unlikely that the copyist would have deliberately replaced the first time 'igitur' by the synonymous 'ergo', and later would have done the inverse. In my view, one cannot but see in this inverted use a serious indication for the presence of both terms in the manuscript that was at the disposal of our copyist, and this in both occurrences. Of course, it is impossible to know whether 'igitur' and 'ergo' were written one after the other, or one above the other, or even one in the text and the other in the margin. Similarly, if this was indeed the case, one cannot determine whether the alternative, as such, was already present in the exemplar of the translators, or has been introduced by a later copyist.

(3) A most interesting case is related to the presence of a double translation, namely 'patientis vel passi' for Arabic *al-munfa'il*, which is attested only in copy B. It is twice included in a passage, where Avicenna states: «Cum ergo duplicaverimus aliquam partem *patientis vel passi* et aliquam partem agentis, quousque consumatur patiens finitum et posuerimus in sua oppositione corporis non finiti aliquas partes finitas, erit ergo relatio unius partis domini potentiae ad potentias omnium partium finiti sicut relatio partis *passi vel patientis* [primi] ad totum patiens, et hoc tamquam potentia partis corporis positi infiniti ad potentiam infiniti» (my italics) (cap. IX, pp. 516-517, lin. 82-87). It immediately strikes that in the second mention of the double translation the word order has been inverted: 'passi vel patientis' instead of 'patientis vel passi'. Moreover, it has to be noted that inside the very same passage one also finds, and this also on two occasions, the single translation 'patiens' for *al-munfa'il*. Now, when one looks at the other copy, i.e. copy A, one finds 'patientis' instead of 'patientis vel passi' and 'passi' instead of 'passi vel patientis': in other words, one finds in A each time the very first term of the double translation as given in B. Hence, it looks probable that this term figured in the actual translation, whereas the other term was most likely added *supra lineam* or in the margin. The presence in copy A of the single translation 'patiens' at the two other instances where the Arabic text has *al-munfa'il*, and this in full accordance with copy B, makes clear that in both of these cases no alternative translation was offered in our copyist's model. Insofar as 'patiens' constituted the standard translation for *munfa'il* in the translations of the Avicenna latinus, regardless whether those translations had been elaborated at Toledo in the twelfth century or at Burgos in the thirteenth century, the absence of such alternative in copies A and B is

simply normal³⁴. On the contrary, what is really surprising is the use of a double translation on the two other occasions in the copy B, and, above all, the single use of 'passi' on one occasion in copy A. In fact, in the former case the present and the perfect participle of the deponent verb 'patior' ('patiens', 'passus') are combined in an attempt to translate the seventh form of the Arabic verb *infa'ala*, which has in itself a passive meaning, namely 'to be or become influenced or affected by'. In this sense 'passus', 'what (or who) is affected by', in so far as it is morphologically passive, appears to be the more literal translation. But it is also obvious that from a semantical point of view the translation 'patiens' is preferable above 'passus'. Unless I am mistaken, the latter's use as a substantified adjective, as is the case here, is very unusual. Such substantified use becomes even more evident in the case of its isolated appearance in copy A. It looks therefore unlikely that a later copyist would have added this unusual alternative translation. Therefore, I am inclined to think that the alternative double translation was already present in the exemplar of the translators, who had perhaps a (small?) hesitation about the accuracy of the present participle 'patiens' for translating the Arabic participle *munfa'il*. It remains however unclear why they have inverted the word order the second time — as indicated above, the mentioning of only the first term in each of the two cases in copy A strongly confirms an actual inversion in the formulation. As such, this gives the impression that they had a slight preference for 'passus' as the most adequate translation, but the presence of the sole term 'patiens' on two occasions in the same context is rather indicative of the inverse. Since nothing permits to explain in a precise, non-speculative way this inversion in formulation, I prefer to leave open the question of which was the reason for this switch. Whatever be that reason, one clearly discovers in the present case a proof that double translations gave rise to different variants in later copying: either the double translation was as such preserved, as shown in copy B, or only one of the two

³⁴ Regarding parts translated at Toledo, see e.g. AVICENNA LATINUS, *Liber de anima seu sextus de Naturalibus* IV-V, I-III, ed. S. VAN RIET. Introduction doctrinale par G. VERBEKE, Peeters - Brill, Louvain - Leiden 1968-1972, p. 256, N°. 479, respectively p. 352, N°. 595 (where one also finds two alternative translations, but in isolated form, namely 'passibilis' and 'passivus'), or AVICENNA LATINUS, *Liber de philosophia prima sive scientia divina* I-X. Lexiques, ed. S. VAN RIET, Peeters - Brill, Louvain-la-Neuve - Leiden 1983, p. 96, N°. 656. As to the translations related to Burgos, see AVICENNA LATINUS, *Liber tertius Naturalium. De generatione et corruptione* cit., p. 214, N°. 507 (where one finds in addition the translations 'receptor operis' or 'recipiens operationem', and even those of 'separatur' [but, in all likelihood, the Latin translator has here read *munfašil* instead of *munfa'il* — from a graphical point of view both Arabic terms are very similar and hence can be easily confused] and 'dependens' [maybe due to a free rendering related to the context]). AVICENNA LATINUS, *Liber quartus Naturalium. De actionibus et passionibus* cit., p. 145, N°. 480 (on occasion the alternative translation 'recipit actionem' is offered).

terms was taken over, as shown in copy A. Since here both copies are by one and the same hand, it is beyond any reasonable doubt that the copyist made his own choices when making each of the two copies. It is worthwhile to stress that the given double translation, as indicated above, was formulated by the translators themselves and, hence, was present in the exemplar of the translation.

CONCLUSION

Many mysteries surround the medieval translation into Latin of Avicenna's *Physics*. Having been accomplished in two phases, distinguished from each other by almost a century, it is far from being clear why the first phase was ended abruptly, and also why the later phase did not cover the complete remaining text, but was restricted to the translation of a few more chapters. Given Avicenna's status as an 'auctoritas', it is also surprising that the work received relatively little attention in the Latin world, especially when compared to Avicenna's *De anima* and *Philosophia prima*. Finally, in spite of a great distance in time, the same basic translation techniques (and some peculiarities related to them) are at work in both phases. However, one detects important changes in the translation of some technical terms and, surprisingly, a greater fluidity in terminology in the later Burgos phase than in the previous Toledo stage.

ABSTRACT

The Liber primus naturalium, i.e., the Physics of the Avicenna latinus

The Latin translation of *Al-Samā' al-ṭabī'ī* of Ibn Sīnā's major work *Al-Šifā'* is unique insofar as it has been translated in two phases at different places, i.e. Toledo and Burgos, and in different times, i.e. second half of the twelfth century and ca. 1270-1275. Moreover, it was never translated in its entirety. Despite the absence of any clear evidence, a plausible reason is sought for both the sudden stopping of the Toledo translation and the (at first sight, conscious) putting into end of the Burgos translation. It is, moreover, shown that the translation had only a limited influence on the Latin world. Finally, great attention is paid to the translation techniques, especially the phenomenon of 'double translation'. Generally speaking, one discovers many common elements between the translation techniques used in both phases of the translation. The only major difference seems to consist in a greater fluidity in translating technical terms in the later Burgos translation than in the earlier Toledo translation.

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