

Aristotle in the Medical Works of Arnau de Vilanova (c. 1240–1311)

Sergi Grau Torras

Universitat Autònoma de Barcelona
sergigrautorras@gmail.com

Abstract

Arnau de Vilanova, one of the most important physicians of the Latin Middle Ages, was familiar with the vast majority of Aristotle's works that had been translated into Latin. He used a wide range of them, such as the *Organon* – the introductory books on logic – and the natural philosophical books, which cover a different branches of knowledge. He used Aristotle as an authority, trying to reconcile him with the field of medicine as practiced in his time. In so going, he defined a new theoretical model of medicine by the standards of natural philosophy, while continuing to emphasize the boundaries between medicine and natural philosophy. This paper represents to a first attempt to investigate the Aristotelian quotations in the medical writings of Arnau de Vilanova.

Keywords

Arnau de Vilanova – Aristotle – medicine – natural philosophy – Galen

* Universitat Autònoma de Barcelona; Institut d'Estudis Medievals; Edifici B - Campus de la UAB; Bellaterra, Barcelona 08193; Spain. The author would like to thank this journal's referees for their useful comments on my earlier version. This article is a result of the research project FFI2011-29117-Co2-02, funded by the Spanish Ministry of Science and Innovation en entitled "Corpus digital de la ciencia medieval en la corona de Aragón y su contexto latino y románico: obras vernáculas, Arnau de Vilanova y Vicent Ferrer. 02. Arnau de Vilanova." The abbreviations used in this article are: *Arnaldi de Villanova Opera Medica Omnia (AVOMO)*, *Aristoteles Latinus (AL)*, *Aristoteles Semitico-Latinus (ASL)* and *Aristoteles Latinus Database*. Release 2/2006, moderantibus J. Brams, C. Steel, P. Tombeur, cooperantibus P. De Leemans et E. Gouder. (Turnhout) (*ALD*).

Introduction

Arnau de Vilanova (c. 1240–1311) was one of the most important physicians of the Latin Middle Ages. He wrote extensive medical works in Latin, which contributed to the establishment of medicine as a science in the scholastic sense of the term. As is well known, the medieval recovery of the Aristotelian corpus by means of Latin translations was crucial for the development of scholasticism, in general, and natural philosophy, in particular, in the Latin West. The Aristotelian works were translated by a number of translators into Latin either from Arabic or Greek manuscripts, yielding a fragmented mosaic of translations, comments and interpretations of Aristotle's works. During the twelfth and thirteenth centuries, several Aristotelian works were established as the basis for university studies of the arts, especially the *Organon*, Aristotle's introductory works into logic, and gradually, albeit in some cases grudgingly, also his works in natural philosophy.

Given that one could probably access the faculty of medicine only with an arts degree, it was obvious that physicians-in-training were all acquainted with Aristotle's thought. But even in the medical curriculum, Aristotle was much used. As a consequence, medieval medicine came to develop a method that grounded medical practice on the principles of Aristotelian natural philosophy.¹ But medicine was of course not based on Aristotle; much more important was the introduction into the Latin curriculum the collection of works on pathology and clinical and therapeutic medicine by the Greek physician Galen.² Not surprisingly, Galen played an important role in the medical theory and practice of Arnau de Vilanova, who studied Galen's works, translated some works of his, and wrote commentaries.³ He also participated in the consolidation of Galenic

1 On this issue, see, among others, Michael R. McVaugh, "The Nature and Limits of Medical Certitude at Early Fourteenth-Century Montpellier," *Osiris*, 6 (1990), 62–84; Luis García Ballester, "The Construction of a New Form of Learning and Practicing Medicine in Medieval Latin Europe," *Science in Context*, 8 (1995), 75–102.

2 Luis García Ballester, "Artifex factivus sanitatis. Health and Medical Care in Medieval Latin Galenism," in Don Bates, ed., *Knowledge and the Scholarly Medical Traditions* (Cambridge, 1995), 127–150; Luis García Ballester, *Galen and Galenism: Theory and Medical Practice from Antiquity to the European Renaissance*, eds. Jon Arrizabalaga, Montserrat Cabré, Lluís Cifuentes and Fernando Salmón (Aldershot, 2002); Roger French, *Medicine before Science: The Business of Medicine from the Middle Ages to the Enlightenment* (Cambridge, 2003), 34–58.

3 Juan A. Paniagua, "Las traducciones de textos médicos hechas del árabe al latín por el Maestro Arnau de Vilanova," in *Actas del XXVII Congreso Internacional de Historia de la Medicina*. Barcelona, 1980, vol. 1 (Barcelona, 1981), 321–326 [Reimp. in Juan A. Paniagua, *Studia Arnaldiana. Trabajos en torno a la obra médica de Arnau de Vilanova, c. 1240–1311*

medicine in the medical faculty at Montpellier, whose culmination was the reform of the medical curriculum connected with the papal bull *Ad pascendum oves* issued by Pope Clement V in 1309, which led to the establishment of what Luis García Ballester has defined as the corpus of the “new Galen.”⁴

The introduction of Aristotle’s works was crucial to the development of this new medicine, which was grounded upon natural philosophy. When Arnau de Vilanova wrote his first medical treatise in around 1270, most Aristotelian works had already been introduced in the West; Arnau de Vilanova used them in defining a new medical theory.

Aristotle in the Medical Writings of Arnau de Vilanova

The table, below, provides information about the genuine medical works by Arnau de Vilanova that contain references to Aristotle’s works.⁵

Works of Arnau de Vilanova	References to Aristotle
Translations	
1. <i>De medicinis simplicibus</i> (AVOMO XVII)	Yes
2. <i>De rigore, tremore, ictigatione et spasmo</i> (AVOMO XVI)	–
3. <i>De viribus cordis</i>	–
4. <i>Doctrina Galieni de interioribus</i> (AVOMO XV)	–

(Barcelona, 1994), 327–334]; Luis García Ballester and Eustaquio Sánchez Salor, “Introducción,” in Arnau de Vilanova, *Commentum supra tractatum Galieni de malicia complexionis diverse*, eds. García Ballester and Sánchez Salor; *Doctrina Galieni de interioribus*, ed. Richard J. Durling, AVOMO XV (Barcelona, 1985), 15–119.

- 4 Alexandre Germain, ed., *Cartulaire de l’Université de Montpellier: 1181–1400*, vol. 1 (Montpellier, 1890), 219–221, doc. 25. See also Luis García Ballester, “Arnau de Vilanova (c. 1240–1311) y la reforma de los estudios médicos de Montpellier (1309): El Hipócrates latino y la introducción del nuevo Galeno,” *Dynamis*, 2 (1982), 97–158 [updated English version: Luis García Ballester, “The New Galen: A Challenge to Latin Galenism in Thirteenth-century Montpellier,” in Klaus-Dietrich Fischer, Diethard Nickel and Paul Potter, eds., *Text and Tradition. Studies in Ancient Medicine and Its Transmission. Presented to Jutta Kollesch* (Leiden, 1998), 55–83].
- 5 Sebastià Giral and Jaume Mensa, “Obra mèdica,” in *Arnau DB. Corpus digital d’Arnau de Vilanova* (2013) «<http://grupsderecerca.uab.cat/arnau>». Here I only include Arnau’s genuine medical corpus, plus the treatise *De esu carniū*. Where there is a critical edition of a work, I also mention this in brackets. The medical work has been published by the University of Barcelona in conjunction with Fundació Noguera in the *Arnaldi de Villanova Opera Omnia Medica* collection.

Works of Arnau de Vilanova	References to Aristotle
5. <i>Compendium regimenti acutorum</i>	-
Comments	
6. <i>Repetitio super Vita brevis</i>	Yes
7. <i>Tabula super Vita brevis</i>	-
8. <i>Expositio super isto amphorismo Ypocratis: in morbis minus...</i>	-
9. <i>Commentum super tractatum Galieni de malicia complexionis diverse</i> (AVOMO XV)	Yes
10. <i>Commentum supra tractatum Galieni de morbo et accidenti</i> ⁶	Yes
Aphorisms	
11. <i>Aphorismi de gradibus</i> (AVOMO II)	-
12. <i>Medicationis parabole</i> (AVOMO VI.1)	Yes
13. <i>Aphorismi particulares</i> (AVOMO VI.2)	-
14. <i>Aphorismi de memoria</i> (AVOMO VI.2)	-
15. <i>Aphorismi extravagantes</i> (AVOMO VI.2)	-
Theoretical medicine and natural philosophy	
16. <i>De amore heroico</i> (AVOMO III)	Yes
17. <i>Epistola de reprobacione nigromantice ficcionis</i> (AVOMO VII.1)	-
18. <i>Tractatus de intentione medicorum</i> (AVOMO V.1)	Yes
19. <i>Tractatus de humido radicali</i> (AVOMO V.2)	Yes
20. <i>De consideracionibus operis medicine sive de flebotomia</i> (AVOMO IV)	Yes
21. <i>De dosi tyriacalium medicinarum</i>	-
22. <i>Speculum medicinae</i>	Yes
23. <i>Compilatio de conceptione</i>	-
Practical medicine	
24. <i>Regimen sanitatis ad regem Aragonum</i> (AVOMO X.1)	Yes
25. <i>Regimen Almariae or Regimen castra sequentium</i> (AVOMO X.2)	-
26. <i>Practica summaria</i>	-
27. <i>Pars operativa or De parte operativa</i>	Yes
28. <i>Regimen podagrae</i>	-
29. <i>De esu carniuum</i> (AVOMO XI)	Yes

6 In this case, the autorship is discussed. On this subject, see Eustaquio Sánchez Salor, Luis García Ballester and Fernando Salmón, "Tradición manuscrita y autoría: Sobre la posible autenticidad del comentario de Arnau de Vilanova al *De morbo et accidenti de Galeno*," *Arxiu de Textos Catalans Antics*, 14: Actes de la I Trobada Internacional d'Estudis sobre Arnau de Vilanova, vol. 2 (1995), 31-74.

As this list shows, at least 13 medical works by Arnau de Vilanova include references to Aristotle's works, either directly or indirectly. The other works do not seem to quote Aristotle or his work, at least in a recognizable way.

But which Aristotelian works did Arnau de Vilanova use? Basically, he used the great majority of those works that were available in Latin. We may distinguish one group of works, which are linked to logic, including the *Categoriae*, *Topica* and *Analitica posteriora*. Arnau seemed very familiar with almost the entire *Organon*, which he thoroughly integrated into a number of his works. Another group of Aristotelian writings is linked to natural philosophy, such as *Meteorologica*, *De generatione et corruptione*, *Physica*, *De anima* and the books on animals. Among the latter, he refers to *De motu animalium* – shortly after it had been translated into Latin – as well as *De partibus animalium*, *De historia animalium* and *De generatione animalium*. He also uses the treatises on natural history collected in the *Parva naturalia*, such as *De somno et vigilia*, which is cited in more than one work.⁷ Furthermore, the critical analysis of Arnau's *Tractatus de humido radicali* contains enough elements to conclude that he was familiar with further treatises of the *Parva naturalia*.⁸

In fact, Arnau de Vilanova owned several of Aristotle's works. The posthumous inventory of his possessions made by his executors mentions the following two: "Item quemdam librum sine postibus sujus rubrica est *Liber Ethicorum primus incipit*,"⁹ and the "*metafisica* Aristotelis."¹⁰ Arnau cites these two books on more than one occasion. His library also included a "libellus super quantum metaurorum," which may refer to Aristotle's *Meteorologica*, a book that is also

7 Arnau refers to this Aristotelian treatise, which explains dreams as affection of the common sense in animals, in his *Tractatus de intentione medicorum*, the *Speculum medicinae* and his comment on Galen's *De morbo et accidenti*.

8 The issue of "humidity" is found in several treatises of the *Parva naturalia*. It seems that Arnau used in the *Tractatus de humido radicali* also several topics mentioned by Aristotle in the *De longitudine et brevitate vitae*, *De iuventute et senectute* and *De morte et vita*. On this issue, see Chiara Crisciani and Giovanna Ferrari, "Introduzione," in Arnau de Vilanova, *Tractatus de humido radicali*, eds. Michael R. McVaugh, Chiara Crisciani and Giovanna Ferrari, *AVOMO* v.2 (Barcelona, 2010), 412.

9 Roc Chabàs, "Inventario de los libros, ropas y demás efectos de Arnaldo de Villanueva (pergamino o.7430 del archivo Metropolitano de Valencia)," *Revista de Archivos, Bibliotecas y Museos*, 9 (1903), 200, n. 308. On the inventory see also Roc Chabàs, "Testamento de Arnaldo de Vilanova," *Boletín de la Real Academia de la Historia*, 28 (1896), 87–91; Ramon d'Alòs, "De la marmessoria d'Arnau de Vilanova," in *Miscel·lània Prat de la Riba*, vol. 1 (Barcelona, 1923), 289–306; Joaquim Carreras, "La llibreria d'Arnau de Vilanova," *Analecta Sacra Tarraconensia*, 11 (1935), 63–84.

10 D'Alòs, "De la marmessoria," 304.

cited more than once.¹¹ One of the Aristotelian books that Arnau used most frequently is the *Metaphysica*, which is mentioned several times in the *Tractatus de intentione medicorum*, the *Commentum supra tractatum Galieni de malicia complexionis* and finally in the *Tractatus de humido radicali*.¹² Arnau had a copy of this work in his library, and he thoroughly applied ideas and concepts contained in it to the field of medicine.

In his writings, Arnau de Vilanova refers to Aristotle by name and by the epithet “the Philosopher.” In some cases, he cites the book that he is referring to, but in many others, he does not. Finally, his citations are only rarely literal.

Four among Arnau’s writings stand out for their abundant citing of Aristotle: they are the *Tractatus de intentione medicorum*, the *Tractatus de humido radicali* and the comments on Galen’s works *De malicia complexionis diverse* and *De morbo et accidenti*. Arnau wrote these four works in the 1290’s, when he was teaching at Montpellier.¹³ All of these writings addressed themselves to an expert audience and to his students. In that period of his writings, he mainly used quotations from the Aristotelian works that were promoted at Montpellier. His writings from other periods contain fewer references to Aristotle; but even then, he did use enough of them to demonstrate that Aristotle was never far from his mind. Take, for example, his *Speculum medicinae* (c. 1308), which contains quotations of various works by Aristotle.

We may deduce that the University of Montpellier was the best place to get to know the Latin Aristotle, a knowledge that was encouraged by the magisterium and the discussions between physicians and natural philosophers. Arnau might also have become familiar with Aristotle through Arabic or Hebrew

11 Ibid. Apart from this reference, the inventory also mentions “Item Boecius de scolastica disciplina et quartus metaurorum in pergamino scriptus pro tribus solidis.”

12 Arnau de Vilanova, *De amore heroico. De dosi tyriacalium medicinarum*, ed. Michael R. McVaugh, *AVOMO III* (Barcelona, 1985), 188, line 4 and 14; p. 191, line 28; p. 191, line 28; p. 226, line 1; Arnau de Vilanova, *Tractatus de humido radicali*, line 426–429 and 650–651.

13 On this period see Juan A. Paniagua, “Arnau de Vilanova, maître-régent à l’École de Médecine de Montpellier,” in *Histoire de l’Ecole médicale de Montpellier. Actes du noe Congrès national des sociétés savantes. Montpellier, 1985*. Vol 2: Colloque sur l’histoire de l’école médicale de Montpellier (Paris, 1985), 57–66; Fernando Salmón, “La obra médica de Arnau de Vilanova en Montpellier,” in Thomas Granier and Daniel Le Blévec, eds., *L’Université de médecine de Montpellier et son rayonnement (XIIIe-XVe siècles)*. Actes du colloque international de Montpellier organisé par le Centre historique de recherches et d’études médiévales sur la Méditerranée occidentale (Université Paul Valéry - Montpellier III), 17–19 mai 2001 (Turnhout, 2004), 133–143.

codices. In fact, when he finished his studies in Montpellier, he translated some medical texts from Arabic into Latin.¹⁴ One of these translations was the *De medicinis simplicibus* by Abu-l-Salt (c. 1270), which also contains a reference to Aristotle.¹⁵ During this period, he also began studying Hebrew in Barcelona with Ramon Martí. Throughout his life, he furthermore remained close to his nephews and physicians Ermengol and Joan Blasi, who were both members of Montpellier's Hebrew community, which played an important role in translating medical works.¹⁶ It is therefore evident that Arnau must have been aware of the influence of Aristotle on Arabic and Jewish philosophers and physicians.

Arnau was not the only Montpellier physician to rely on Aristotle, nor the first one to do so. Magister Cardinalis and Gilbertus the Englishman preceded him in this respect. There were also several contemporary physicians such as Bernard de Gordon (c. 1258–1318/20), who exemplify a similar use of Aristotle in medical training. Bernard, who taught at Montpellier from 1295 to 1318, used a wide variety of Aristotelian works; his knowledge included similar works as those used by Arnau, in the domains of logic, natural philosophy and the books

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- 14 On Arabic influence on Arnau, see Juan A. Paniagua, "L'arabisme à Montpellier dans l'oeuvre d'Arnald de Villeneuve," *Le Scalpel*, 117 (1964), 631–637 [Reimp. in Paniagua, *Studia Arnaldiana*, 317–325]; Luis García Ballester, "Las influencias de la medicina islámica en la obra médica de Arnau de Vilanova," *Estudi General*, 9 (1988), 79–95; Pedro Santonja, "Arnau de Vilanova y el pensamiento islámico," *Dynamis*, 10 (1990), 39–61.
- 15 Arnau de Vilanova, *Translatio libri Albuzale de medicinis simplicibus*, eds. Ana Labarta, Michael R. McVaugh, José Martínez Gázquez and Lluís Cifuentes, *AVOMO XVII* (Barcelona, 2004), 267: 12.48 (XII.48): "Sulphur calidum et siccum in quarto gradu. Dyascorides et Aristotelis dicunt quod valet tussi et extrahit putredinem a pectore cito."
- 16 On this subject, see Miquel Batllori, "La documentación de Marsella sobre Arnau de Vilanova y Juan Blasi," *Analecta Sacra Tarraconensia*, 21 (1948), 75–119; Luis García Ballester and Eduard Feliu, "Las relaciones intelectuales entre médicos judíos y cristianos: la traducción hebrea de las *Medicationis parabole* de Arnau de Vilanova por Abraham Abigdor (ca. 1384)," *Asclepio*, 45 (1993), 55–88; Michael R. McVaugh, "Armengaud Blaise as a Translator of Galen," in Edith Sylla and Michael R. McVaugh, eds., *Texts and Contexts in Ancient and Medieval Science. Studies on the Occasion of John E. Murdoch's Seventieth Birthday* (Leiden, 1997), 115–133; Lola Ferre, "Hebrew Translations from Medical Treatises of Montpellier," *Korot*, 13 (1998–1999), 21–36.

on animals.¹⁷ In addition, Bernard de Gordon also invoked several Aristotelian concepts taken from the *trivium*.¹⁸

The *Organon*

As mentioned before, the training in medicine presumed the student's previous training in the liberal arts. We may presuppose such a training also for Arnau de Vilanova, as he was clearly very familiar with Aristotle's *Organon*, quoting from almost all the relevant works that were included in the arts curriculum.¹⁹ He refers to the *logica vetus*, including the *Categories* and *Perihermenias*, and to all the works included in the *logica nova*, namely the *Prior Analytics*, *Posterior Analytics*, *Topics* and *Sophistici Elenchi*. The question is of course whether or not Arnau de Vilanova – and other Montpellier physicians of his time – studied the arts before or rather during their medical training. While at some European universities, an arts degree was required in order to study medicine, in Montpellier the school of arts and the school of medicine coexisted and were self-regulated. However, in the thirteenth century, there was certainly a relationship between the two faculties. In 1240, students holding an arts degree were required to study medicine fewer years, and it is assumed that many medical students earned an

17 Luke Demaitre, *Doctor Bernard de Gordon, Professor and Practitioner* (Toronto, 1980), 23–25. The works of Aristotle used by Bernard de Gordon are, among others: *De animalibus*, *De historia animalium*, *De motibus animalium*, *De coloribus*, *De anima*, *Metaphysica*, *Topica* and *Ethica*. On this issue, see the table in Demaitre, *Bernard de Gordon*, 105. A brief comparison between the works used by Arnau de Vilanova and Bernard de Gordon can be found in Sergi Grau Torras, "Arnau de Vilanova and Bernard de Gordon: Similarities and Differences in the Use of Aristotle in the Medicine (1270–1320)," *Medievalia*, 16 (2013), 65–70.

18 Demaitre, *Bernard de Gordon*, 16.

19 Claude Lafleur, *Le «Guide de l'étudiant» d'un maître anonyme de la Faculté des arts de Paris au XIIIe siècle*, (Québec, 1992). This guide lists all the works of Aristotle used in the academic curriculum. Regarding Aristotle, the section on natural philosophy mentions the *Physics* and the *Metaphysics* (the *vetus* and *nova* versions) and *De causis*; the section on logic contains a similar reference to the *Analytica posteriora* as that contained in Arnau's *Commentum supra tractatum Galieni de malicia complexionis*; the section on moral philosophy mentions the *Ethica nichomachea*, among others; and section on rational philosophy refers to rhetoric, grammar and logic. In the logic section, we find the *Categoriae uel predicamenta*, *Topica* and *Analytica posteriora*, which were also all used by Arnau de Vilanova.

arts degree.²⁰ Certainly, the evidence of physicians' use of Aristotle suggests the knowledge of works treated in the arts courses.

There are some interesting examples of Arnau de Vilanova's use of the logical corpus. He mentions Aristotle's *Categoriae vel praedicamenta* or "Categories" in his *Tractatus de intentione medicorum*. Its use belongs to the context of the disagreement between Galen and Aristotle over the existence of a third disposition or condition next to disease and health. Galen had pleaded for an intermediate, neutral condition, which he named "media dispositio." For Aristotle, by contrast, disease and health were opposites without any middle disposition.²¹

With respect to this question, Arnau invokes the *Categoriae* and the *Topica*.²² In the *Categoriae*, Aristotle says opposites such as health and disease have no middle ground. These opposites are incapable of admitting contrary qualities, because no change takes place in them. But it is because of the modification within the substance itself that a substance can be capable of admitting contrary qualities.²³ Only in cases that allow for such a blend – such as the intermediary colors between black and white – does Aristotle admit the existence of a middle term. Arnau uses this exception to introduce Galen's intermediate. In order to define this middle term between disease and health, he establishes three conditions of the human body, namely health, disease and the *media dispositio*, and he uses the "Philosopher's" doctrine in support of this division.

20 Germain, *Cartulaire de l'Université de Montpellier*, 1: 186–190, doc. 5: "Nullus magister presentet aliquem, nisi ille audierit medicina in Montepessulano vel in alio loco famoso ad minus per tres annos et dimidium, nisi idem fuerit magister in artibus Parisius vel in alio loco famoso; et talis possit post duos annos et dimidium presentari." On this matter, see Danielle Jacquart, *Le Milieu médical en France du XI^e au X^e siècle. En annexe 2e supplément au "Dictionnaire" d'Ernest Wickersheimer* (Genève, 1981); Cornelius O'Boyle, *The Art of Medicine: Medical Teaching at the University of Paris, 1250–1400* (Leiden, 1998); Michael R. McVaugh, "Medicine and Arts in Thirteenth-century Paris," in Spencer E. Young, ed., *Crossing Boundaries at Medieval Universities* (Leiden, 2011), 189–211.

21 Arnau de Vilanova, *Tractatus de intentione medicorum*, 118, line 24–25: "Dicit enim quoniam dispositiones humani corporis tres existunt, sanitas scilicet, et egritudo et media dispositio (que neutralitas appellatur); sententia tamen philosophi est quod inter sanitatem et egritudinem media dispositio nunquam sit." On the middle disposition, see Maaïke van der Lugt, "Neither Ill nor Healthy. The Intermediate State between Health and Disease in Medieval Medicine," *Quaderni storici*, 136 (2011), 13–46.

22 Aristotle, *Categoriae vel Praedicamenta* 12a1–9; *Topica* 11.6, 112a24–25 and IV.3, 123b17–18.

23 Aristotle, *Categoriae vel Praedicamenta*, 11b35–12a1.

The oldest translation of the *Categories* was Boethius'; some years later, an anonymous, further version of this translation had emerged.²⁴ William of Moerbeke translated this work once again in 1266, and his version came to replace the older ones; in fact, it became the official Aristotle text in Paris. There are several differences between the old and new translations. In this case, while Moerbeke used the term "intermedium,"²⁵ Boethius used "medium"²⁶ – and Arnau uses this second translation in his work. It therefore seems more probable that Arnau relied on Boethius' translation. Furthermore, in Boethius' translation of the *Topica*, we encounter a similar example referring to the same disposition, again using the term "medium."²⁷

24 AL I 1–5 *Categoriae vel Praedicamenta. Translatio Boethii, Editio Composite, Translatio Guillelmi de Moerbeka, Lemmata e Simplicii commentario decerpta, Pseudo-Augustini Paraphrasis Themistianae*, ed. Lorenzo Minio-Paluello (Bruges, 1961).

25 AL I 1–5 *Categoriae uel Praedicamenta*, 12a1–9 (trans. William of Moerbeke): "Quaecumque autem contrariorum talia sunt ut in quibus nata sunt fieri vel de quibus predicari necessarium ipsorum alterum inesse, horum nullum est intermedium (quorum autem non necessarium inesse, horum est aliquid intermedium semper); velut egritudo et sanitas in corpore animalis nata est fieri, et necessarium alterum inesse in corpore animalis, vel egritudinem vel sanitatem; et impar autem et par de numero predicantur, et necessarium alterum inesse numero, vel impar vel par; et non est horum aliquod intermedium, neque egritudinis et sanitatis neque imparis et paris."

26 AL I 1–5 *Categoriae vel Praedicamenta*, 12a1–9 (trans. Boethius): "Quaecumque vero contrariorum talia sunt ut in quibus nata sunt fieri et de quibus praedicantur, necessarium sit alterum ipsorum inesse, nihil eorum medium est (quorum autem non est necessarium alterum inesse, horum omnium est aliquid medium): ut aegritudo et sanitas in corpore animalis nata est fieri, et necesse est alterum ipsorum inesse animalis corpori aut aegritudinem aut sanitatem; et par quidem et impar de numero praedicatur, et necesse est horum alterum numero inesse, vel par vel impar; et non est horum aliquid medium, neque aegritudinis neque sanitatis, neque imparis neque paris." AL I 1–5 *Categoriae vel Praedicamenta*, 12a1–9 (trans. Boethius secundum 'editionem uulgatam'): "Quaecumque vero contrariorum talia sunt ut in quibus nata sunt fieri et de quibus praedicantur, necessarium est alterum ipsorum inesse, nihil eorum medium est (quorum vero non est necessarium alterum inesse, horum omnium est aliquid medium omnino): ut languor et sanitas in corpore animalis naturam habet fieri, et necessarium est alterum esse animalis corpore, vel languorem vel sanitatem; sed et par quidem et impar de numero praedicatur, et necessarium est alterum in numero esse, aut abundans aut perfectum, et nihil est in medio horum, neque inter languorem et sanitatem, neque inter abundantem et perfectum."

27 AL V 1–3 *Topica. Translatio Boethii, Fragmentum Recensionis Alterius et Translatio Anonyma*, ed. Lorenzo Minio-Paluello (Brussels, 1969), II.6, 112a24–25 (trans. Boethius): "Quibus autem necesse est alterum tantum inesse, ut homini aegritudinem vel sanitatem, si ad alterum facile poterimus disputare quoniam inest vel non inest, et ad reliquum

Another example is found, again, in the *Tractatus de intentione medicorum*, where Arnau refers to Aristotle's statement that good definitions also apply to opposites, as set down in the *Topica* and *Metaphysica*.²⁸ Arnau says the doctor's main objective (*intentio*) is to care for the natural disposition of the human body, which is called 'health' (*sanitas*) or 'natural temperament'.²⁹ The opposite of this disposition, which is called 'disease' (*morbus*), strives to remove from the body this natural condition.³⁰ It is here that Arnau refers to "the discipline of opposites," described by Aristotle.³¹

The *Topica* was widespread in the Latin world thanks to two different translations, which generated a large number of manuscripts (defined by a number of variations). The older translation is once more Boethius'.³² Some years later a *recensio* of the fourth book of this translation was produced.³³ In the twelfth century, another translation was carried out, by an anonymous author.³⁴ In this case, the sentence quoted by Arnau, "qui bene diffiniunt contraria consignant," is almost identical to the Latin versions of the *Topica*.³⁵ Furthermore, Arnau's expression concerning the opposites – "eadem enim est disciplina contrariorum" – appears in almost identical form in the *Metaphysica* – a work that

poterimus" and *Topica* IV 3, 123b17–18: "utrorumque enim est aliquid medium. Instantia huius quoniam sanitatis et aegritudinis nichil est medium, mali autem et boni."

28 Aristotle, *Topica* VI.2, 140a 18–19 and Aristotle, *Metaphysica* IX.2, 1046b10–11.

29 Arnau de Vilanova, *Tractatus de intentione medicorum*, 100, line 8–12: "Iam nos alibi sepe dixisse recolimus quod intentio artificis medicine ad unicum finem principalem ordinatur, tantummodo videlicet ad custodiam dispositionis naturalis (que sanitas vel temperamentum naturale vocatur) in humano corpore, precipue et in partibus eius."

30 Ibid., line 12–15: "Quod enim contrarium illius dispositionis (quod morbus vocatur) nititur remove a corpore, hoc non est propter se sed propter dictum finem, unde illud intenditur principaliter et per se, istud autem propter illud."

31 Ibid., line 18–19: "Eadem enim est disciplina contrariorum; sed in omni disciplina unum intenditur per se et reliquum per accidens, unde considerato uno consideratur reliquum (iuxta illud: qui bene diffiniunt contraria consignant)."

32 *Translatio Boethii* in *AL V 1–3 Topica*, 5–179.

33 *Boethius translator Aristotelis secundum 'recensionem alteram'* in *AL V 1–3 Topica*, 183–185.

34 *Translatio Anonyma* in *AL V 1–3 Topica*, 191–307.

35 The only difference is that Boethius included a Latin relative pronoun "qui" that does not appear in the anonymous translation; *AL V 1–3 Topica* VI.2, 140a18–19 (trans. Boethius): "Amplius si non manifesta est contrarii ratio ex hoc quod dicitur; nam qui bene assignant et contrarias consignant"; *AL V 1–3 Topica* VI.2, 140a18–19 (*Translatio anonyma*): "Amplius si non manifesta contrarii ratio ex ea que dicta est; nam bene assignate et contrarias consignant."

was well known by students of the arts.³⁶ In this case, Aristotle says that every rational potency admits of equally contrary results while irrational potencies admit only one result; such is the case of medical science, which can produce both disease and health. The reason for this is that ‘science’ provides a rational account, and the same account explains both the thing and its absence. Therefore, such sciences must deal with contraries, since negation and removal throw light on the contrary.

Natural Philosophy

Another group of Aristotelian works used by Arnau belongs to natural philosophy and includes the *Meteorologica*, *De generatione et corruptione*, *Physica*, *De anima* and the books on animals. In general terms, Arnau de Vilanova made use of some of Aristotle’s theories to legitimize his theoretical medicine, which he based on natural philosophy. In his *Speculum medicinae*, Arnau de Vilanova defines medicine as the science that knows the dispositions of the human body.³⁷ In this respect, natural philosophy provides the physician with the knowledge of nature. Still, the physician must only take over from natural philosophy those elements that serve the specific purposes of medicine.

This premise lay at the basis of the development of a new form of medicine, which was developed in the *Tractatus de intentione medicorum*. There, Arnau established the limits of true medicine and of the physician’s use of natural philosophy, while at the same time combining natural philosophy and medicine

36 AL XXV 2 *Metaphysica*, lib. I-X, XII-XIV, *Translatio Anonyma sive ‘Media’*, ed. Gudrun Vuillemin-Diem (Leiden, 1976), IX.2, 1046b10–11 (Translatio anonyma): “Causa vero quia ratio est scientia, et ratio eadem ostendit rem et privationem, non tamen similiter, et est amborum, est autem quasi existentis magis, quare necesse tales scientias esse quidem contrariorum”; AL XXV 3 *Metaphysica*, lib. I-XIV. *Recensio et Translatio Guillelmi de Moerbeke*, ed. Gudrun Vuillemin-Diem (Leiden, 1995), IX.2, 1046b10–11 (Recensio Guillelmi): “Causa AUTEM quia ratio est scientia: ratio AUTEM eadem ostendit rem et privationem, tamen non similiter, et est UT amborum, est autem UT existentis magis. Quare necesse ET tales scientias esse quidem contrariorum.” On the use of the *Metaphysics* in the Arts curriculum, see Jacqueline Hamesse, *Les Auctoritates Aristotelis. Un Florilège médiéval. Étude historique et édition critique* (Louvain, 1974), 134, n. 223: “Eadem est scientia contrariorum.”

37 Arnau de Vilanova, *Speculum medicinae*, in *Hec sunt opera Arnaldi de Villa nova nuperrime recognita* (Venice, 1505), f. 1ra: “Medicina est scientia cognoscendi dispositiones humani corporis, in quantum sanabile, et conservandi sanitatem inuentam in eo, et restituendi deperditam, quantum possibile fuerit.”

by taking Aristotle and Galen as central figures.³⁸ In the *Tractatus de humido radicali*, Arnau invokes Aristotle on several occasions in his discussion of radical humidity. Here, Arnau attacked the natural philosophers who misunderstood Aristotle and mistook radical humidity for sperm.³⁹ Arnau establishes a clear demarcation between the two fluids and constructs a theory partly based on Aristotle's notion of radical humidity. Indeed, the influence of Aristotle was in this instance so remarkable at this point that

the result of it is an overall 'Aristotelization' of the concept of radical humidity, and its absorption into philosophical categories which – albeit by other ways and with results that were far less enlightening – had already been tried by Albert the Great.⁴⁰

Another group of Aristotelian books on natural philosophy which Arnau used were those concerned with animals, which he used to explain physiological and biological processes. One of the most important ideas that stemmed from these treatises concerns the heart as the engine of movement. The *De amore heroico*, one of Arnau's earliest works, written around 1270, contains a reference to Aristotle's *De motu animalium*, and more specifically to a passage in which it is argued that the heart is in animals the center of the senses and the beginning of movement.⁴¹ Movement appears when an alteration is produced in the heart region by heat, cold, or any other affection, which causes a reaction in the body when animated by a thought or a perception of the senses. Arnau used *De motu animalium* to justify the idea that when a pleasant object appears to the soul, the recognition of the pleasure multiplies the spirits in the heart and warms it. This warmth is then sent to all the members of the body.⁴²

38 Michael R. McVaugh, "Introduction," in Arnau de Vilanova, *Tractatus de intentione medicorum*, ed. Michael R. McVaugh, AVOMO v.1 (Barcelona, 2000), 21–22.

39 Arnau de Vilanova, *Tractatus de humido radicali*, line 38–49. On this matter see Michael R. McVaugh, "The *humidum radicale* in the 13th Century Medicine," *Traditio*, 30 (1974), 148–174; Chiara Crisciani, "Aspetti del dibattito sull'umido radicale nella cultura del tardo medioevo (secoli XIII–XV)," in *Arxiu de Textos Catalans Antics*, 23–24: Actes de la II Trobada Internacional d'Estudis sobre Arnau de Vilanova (2004–2005), 333–380.

40 Crisciani et al., "Introduzione," 416: "Ne risulta, nel complesso, una «aristotelizzazione» del concetto di umido radicale, un suo assorbimento nelle categorie filosofiche che – per altri percorsi e con risultati molto meno chiarificatori – era stato tentato da Alberto Magno."

41 Aristotle, *De motu animalium*, 700b5–703a28.

42 Arnau de Vilanova, *De amore heroico*, 49, line 22–25: "Cum enim anime gratum seu delectabile presentatur, ex gaudio delectabilis apprehensi spiritus in corde multiplicati subito

The treatise *De motu animalium* spread throughout the Latin world in the early 1260's once William of Moerbeke had translated it from the Greek.⁴³ This treatise also circulated in translations from the Arabic, but was not included in Aristotle's *De animalibus*, translated directly the Arabic by Michael Scot (c. 1220).⁴⁴ The same idea of the heart in motion is found in his florilegia of quotations.⁴⁵ Arnau referred to the same idea of motion once again almost thirty years later in his *Tractatus de consideracionibus operis medicine sive de flebotomia*, which he wrote between 1298 and 1300, and in which he made the same reference as before, although this time not to the heart's movement, but to the animal's and to the importance of the imagination in causing it.⁴⁶ Again some years later, Arnau expounded the same idea in his *Speculum medicinae*, where he explained that the heart is where movement first begins, triggering a reaction of the spirits, "as the Philosopher says."⁴⁷

In his *Tractatus de intentione medicorum*, Arnau also reconciles the divergence between Aristotle and Galen over the primacy of the heart. Aristotle had argued that the heart was the principal bodily organ, while Galen had maintained that the heart was simply one of the four main organs.⁴⁸ In order to

calefiunt, et calefacti subito –prout inde motibus animalium inquisitum est ea parte qua de motu cordis agitur– delegantur ad membra corporis universa."

- 43 William of Moerbeke's translation in *AL XVII 2.II-III Aristoteles. Guillelmus de Morbeka, De progressu animalium, De motu animalium. Translatio Guillelmi de Morbeka*, ed. Peter De Leemans (Turnhout, 2011) and *AL XVII 1.III Aristoteles, De motu animalium. Fragmenta Translationis anonymae*, ed. Peter De Leemans (Turnhout, 2011).
- 44 Edition of the Latin text from the Arabic in *ASL 5,2 De Animalibus. Michael Scot's Arabic-Latin Translation*, vol. 2: *Books XI-XIV: Parts of Animals*, ed. Aafke M.I. van Oppenraaij (Leiden, 1998); and *ASL 5,3 De Animalibus. Michael Scot's Arabic-Latin Translation*, vol. 3: *Books XV-XIX: Generation of Animals*, ed. H.J. Drossaart Lulofs (Leiden, 1992).
- 45 The same sentence on the heart is in the florilegium of Auctoritates, in Hamesse, *Les Auctoritates Aristotelis*, 208, n. 8: "Principium motus in animalii est in corde."
- 46 Arnau de Vilanova, *Tractatus de consideracionibus operis medicine sive de flebotomia*, eds. Luke Demaitre and Pedro Gil Sotres, *AVOMO IV* (Barcelona, 1988), 196, line 23–24 and p. 197, line 1–2: "Hoc autem in parte naturalis philosophie verificatur, scilicet in consideratione de motibus animalium ubi ostenditur quod forma representata in ymaginacione movet corpus sibi coniunctum et ea que in eo sunt."
- 47 Arnau de Vilanova, *Speculum medicinae*, in *Hec sunt opera Arnaldi de Villa nova nuperrime recognita* (Venice, 1505), f. 1va: "primo quidem in corde movetur localiter, scilicet expansione et retractione spiritus radicalis seu complantatus, ut ait philosophus."
- 48 Arnau de Vilanova, *Tractatus de intentione medicorum*, 103, line 9–18: "Docet enim medicus ibidem principia seu fundamenta membrorum esse quator, visus in hoc obviare directe naturali philosopho inter omnia membra tantum unum esse ponenti principium seu fundamentum ceterorum membrorum. Nos autem oportet hic ostendere secundum

establish common ground, Arnau invoked Aristotle's description of the heart as the central organ and the primary receptacle of blood in *De partibus animalium*.⁴⁹ Arnau's reliance on Aristotle's books for his explanation of the primacy of the heart also occurs in his religious writings. An example is the *Confessió de Barcelona*, a work written in Catalan, in which we find the statement: "As all the virtues in all the members of physical life come from the heart, all the virtues of spiritual life must also come from it."⁵⁰

Other Matters Concerning Physics and Ethics

In addition to what we have heard so far, Arnau de Vilanova used further Aristotelian works concerning on physics and the natural world. He possessed several volumes about natural philosophy, which according to the inventory were a "phisica naturali cum coopertura de pergameno," a "tractatus phisice in pergameno" and a "tractatus phisice qui incipit inter phisicos considerationes," titles that are indicative of his interest in natural philosophy.⁵¹ For his *Tractatus de humido radicali*, Arnau used *De caelo*, where Aristotle discusses the corruptibility of something that exists in finite or infinite time.⁵² In the same treatise, he also refers to a passage in Aristotle's *Physica*, which discusses the relation

ea quae dicta sunt, ut videlicet secundum finem intentum in arte medicine, qualiter medicus necessario cogitur ad hanc considerationem habendam et per consequens ad utendum in doctrina sua cognitiva sermonibus congruis huius considerationi, et qualiter etiam naturali philosopho non repugnat"; and p. 106, line 15–16: "Quod enim philosophus dicit membrum unum esse principium inter membra, loquitur de principio primo et originali, et hoc medicus non negat."

49 Aristotle, *De partibus animalium*, III.4, 666a10–b1.

50 "Així com del cor hixen totes les virtuts de la vida corporal en tots els membres, tot així d'aquell hixen o deuen exir totes les virtuts de vida spiritual." Arnau de Vilanova, *Confessió de Barcelona. Obres catalanes*, vol. 1: *Escrips religiosos*, ed. Miquel Batllori (Barcelona, 1947), 115, line 22–25. See Joseph Ziegler, "Arnau de Vilanova: A Case-study of a Theologizing Physician," in *Arxiu de Textos Catalans Antics*, 13: Actes de la I Trobada Internacional d'Estudis sobre Arnau de Vilanova, vol. 1 (1995), 266. See also in this matter Joseph Ziegler, *Medicine and Religion c. 1300: The Case of Arnau de Vilanova* (New York/Oxford, 1998); Jaume Mensa, *Arnau de Vilanova i les teories medievals de l'amor* (Barcelona, 2012), 115–137.

51 Chabàs, "Inventario de los libros," 190–191, nn. 8, 31 and 32.

52 Arnau de Vilanova, *Tractatus de humido radicali*, line 419–422 and 1062–1065; the reference is to Aristotle, *De caelo* I.12, 281b25–26 and I.6, 274a3–19.

between forces and weights and their movement.⁵³ The *Physica* is also used in the *Tractatus de intentione medicorum*.⁵⁴ The reference there is to Aristotle's explanation of the movement on natural things through contact, which also implies a modification.⁵⁵ Incidentally, the guide for the students of arts in Paris contains two references to the same definition of action, passion and movement as that used by Arnau.⁵⁶ Once again, we see a certain overlap between Arnau's quotations and those found in contemporary guides and treatises.⁵⁷

A further Aristotelian text that Arnau used was the *Meteorologica*. In his *Commentum supra tractatum Galieni de malicia complexionis diverse*, we find a reference "ex principio quarti metheorum."⁵⁸ In the *Tractatus de humido radicali*, we find: "nos librum metheorum vocamus."⁵⁹ Both references are to the fourth book of *Meteorologica*. We mentioned above that his library contained a "libellus super quartum metaurorum," which might refer to this specific work.⁶⁰

The translations of the "Books on Meteors" had also reached the West in different Latin versions. The first of them, known as the *Translatio vetus*, included Gerardo da Cremona's translation of the first three books from Arabic, as well as the fourth book translated directly from the Greek by Henricus Aristippus.⁶¹

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- 53 Arnau de Vilanova *Tractatus de humido radicali*, line 1062–1065; Aristotle, *Physica*, VII.5, 250a10–20.
- 54 Arnau de Vilanova, *Tractatus de intentione medicorum*, 117, line 16–18: "Et intellectui medici ex procedentibus scientiis relinquitur quod nullum existens in potentia ducitur ad actum nisi aliquo motore actu existente quod passionem inferat dicto mobili."
- 55 AL VII 1 *Physica. Translatio Vetus*. eds. F. Bossier and J. Brams (Leiden, 1990), III.2, 202a2–9 (trans. vetus): "quidem quendam esse, sed huiusmodi actum qualem diximus, difficilem quidem videre, contingentem autem esse. Movetur autem et movens, sicut dictum est, omne, cum sit potentia mobile, et cuius immobilitas est quies; cui enim motus inest, huic immobilitas quies est. Ad hoc enim agere, in quantum huiusmodi est, ipsum movere est; hoc autem facit tactu, quare simul et patitur; unde motus actus mobilis est, in quantum est mobile, accidit autem hoc tactu motivi, quare simul et patitur."
- 56 Lafleur, *Le «Guide de l'étudiant»*, 148, n. 101: "Actio et passio sunt unus motus et in passio sicut in objecto" and p. 146, n. 99: "Motus est actum entis in potentia secundum quod in potentia."
- 57 On this topic see Edward Grant, *Physical Science in the Middle Ages* (Cambridge, 1977), 21–59.
- 58 Arnau de Vilanova, *Commentum supra tractatum Galieni de malicia complexionis diverse*, 191, line 7.
- 59 Arnau de Vilanova, *Tractatus de humido radicali*, 285, line 50; the reference is to Aristotle, *Meteorologica* IV.12, 390a5.
- 60 D'Alòs, "De la marmessoria," 304.
- 61 AL X 1 *Meteorologica. Liber quartus. Translatio Henrici Aristippi*, ed. Elisa Rubino (Turnhout, 2010).

These four books formed the treatise known as *Liber Metheorum*, which however also included the third chapter of Avicenna's *De mineralibus* in the translation of Alfredus Anglicus.⁶² A later translation, based on this first one, was prepared by William of Moerbeke in around 1260 and is known as *Translatio nova*.⁶³ The "Books on Meteors" were included in the above-mentioned student guide, which mentions the fourth book in very similar terms as those used by Arnau in the *Commentum supra tractatum Galieni de malicia complexionis diverse*.⁶⁴

Arnau's library also contained a copy of Aristotle's *Ethica*, to which he referred in several works. In *De esu carniū*, written between 1301 and 1305, Arnau mentions Aristotle's discussion of the glutton's incapacity for temperance.⁶⁵ In the *Tractatus de humido radicali*, he mentions Aristotle's example of the absurdity of putting up with a mathematician who tries to persuade, instead of proving, or of asking for strict demonstrative reasoning from a rhetorician.⁶⁶

- 62 See Lorenzo Minio-Paluello, "Henri Aristippe, Guillaume de Moerbeke et les traductions latines médiévales des *Météorologiques* et du *De generatione et corruptione* d'Aristote," *Revue Philosophique de Louvain*, 45 (1947), 206–236 [Reimp. in Lorenzo Minio-Paluello, *Opuscula. The Latin Aristotle* (Amsterdam, 2002, 57–87]; Cristina Viano ed., *Aristoteles chemicus. Il IV libro dei "Meteorologica" nella tradizione antica e medievale* (Sankt Augustin, 2002).
- 63 *AL X 2 1–2 Meteorologica. Translatio Guillelmi de Morbeka*, ed. G. Vuillemin-Diem (Turnhout, 2008).
- 64 Arnau de Vilanova, *Commentum supra tractatum Galieni de malicia complexionis diverse*, 191, line 7: "Et cum siccitas et humiditas non movent neque permutant materiam ad formam propria virtute, sed disponunt eam ad hoc ut diversimode paciatur et moveatur ab aliis qualitibus, et disponunt quidem ad receptionem et retentionem formarum in mixtis, et ideo racionabiliter vocat caliditatem et frigiditatem activas; alias vero passivas, sicut patet ex principio quarti metheorum." See Lafleur, *Le «Guide de l'étudiant»*, 173, n. 17: "Qualitates primae elementorum sunt quattuor inter quas duae sunt activae, scilicet frigidum et calidum; duae vero passivae, silicet humidum et siccum."
- 65 Arnau de Vilanova, *De esu carniū*, ed. D. M. Bazell, *AVOMO XI* (Barcelona, 1999), 122, line 148: "Nam passionati, ut ait Philosophus, male iudicant de veritate virtutum moralium, sicut incontinens et gulosus de medio in quo temperantia consistit (quoniam ibi quandoque dicunt esse temperatum usum veneris et escarum, ubi proculdubio est superfluum)." The reference is to Aristotle, *Ethica Nicomachea*, 17b25–19a20.
- 66 Arnau de Vilanova, *Tractatus de intentione medicorum*, line 790–792: "Iam enim Aristotelis dixit aliter investigari verum debere in mathematicis, aliter in rethoricis et moralibus et cetera." Reference to Aristotle, *Ethica* I.3, 1094b26–27; *AL XXVI 1–3 Ethica Nicomachea. Translatio Antiquissima libr. II–III sive 'Ethica Vetus', Translationis Antiquioris quae supersunt sive 'Ethica Nova', 'Hoferiana', 'Borghesiana', Translatio Roberti Grosseteste Lincolnensis sive 'Liber Ethicorum' (Recensio Pura et Recensio Recognita)*, ed. R. A. Gauthier, 5 vols. (Leiden, 1972–1974), vol. 1, 67: "Eodem autem modo et placere unumquodque eorum

The *Regimen quartane*, which is attributed to Arnau de Vilanova, contains a further reference to the *Ethica*, where the author remarks that virtue found in actions that are easy for everyone to carry out have little or no virtue.⁶⁷

Arnau de Vilanova also used several apocryphal books attributed to Aristotle. Among them was the *Secretum secretorum*, of which he also owned a copy.⁶⁸ This book seems to be used indirectly in the *Regimen sanitatis ad regem Aragonum* of 1305/08, in the chapter on diet, where this work is alluded to in his discussion of the idea that the larger meal should be eaten then when evening falls.⁶⁹ Less clear is the relation to the *Secretum secretorum* in Arnau's chapters on astrological images.⁷⁰ In the *Tractatus de consideracionibus operis medicine sive de flebotomia*, Arnau furthermore mentions the *Problemata*, another apocryphal book commonly attributed to Aristotle.⁷¹ This treatise is

que dicuntur utile. Prudentis enim est in tantum certitudinem inquirere secundum unumquodque genus, in quantum rei natura recipit. Par enim [peccatum] videtur mathematicum probabilia dicentem placere, et rethoricum demonstracionem experiri."

- 67 Sebastia Giralt, "El *Regimen quartane* atribuït a Arnau de Vilanova," *Faventia*, 27 (2005), 97–112, line 14–16: "Nam secundum sentenciam philosophi et ueritatem uirtus circa difficultia uersatur: que enim exerceri sunt facilia parum uel nichil continent uirtuosum"; In this case, it refers to the chapter 4 and 5 of the *Ethica Nicomachea*, 1106b, 1109a–1109b.
- 68 "Item quoddam scriptum supra compotum et secreta Aristotelis in simul scriptum in pergameno et latino," in D'Alòs, "De la marmessoria," 304.
- 69 Edition in Arnau de Vilanova, *Regimen sanitatis ad regem Aragonum*, eds. Luis García Ballester and Michael R. McVaugh, *AVOMO* x.1 (Barcelona, 1996). Quite generally, the *Secretum secretorum* exercised a great influence on health regimens. In the fifth chapter of *Regimen sanitatis ad regem Aragonum*, 433, line 18–21, Arnau mentions that "Que omnia recte considerantes philosophi dixerunt concorditer quod pocior hora maioris refeccionis ad conservandum sanitatem est vespertina, propterea quia nox refeccioni succedit; ex qua tria bona perveniunt, necessaria digestioni perficiende." This idea seems to contain an influence from the *Secretum secretorum*. On this matter, see Juan A. Paniagua ed., *El Maravilloso Regimiento y orden de vivir. Una versión castellana del "Regimen sanitatis ad regem Aragonum"* (Zaragoza, 1980), 70; Juan Cruz, *Dietética medieval. Apéndice con la versión castellana del Régimen de salud de Arnau de Vilanova* (Huesca, 1997), 41; Pedro Gil Sotres, "Introducción," in Arnau de Vilanova, *Regimen sanitatis ad regem Aragonum*, 506–508; Sebastia Giralt, "Estudi introductorï," in Arnau de Vilanova, *Epistola de reprobacione nigromantice fictionis (De improbatione maleficiorum)*, ed. Sebastia Giralt, *AVOMO* VII.1 (Barcelona, 2005), 33–34, 36, 77–78.
- 70 Sebastia Giralt, "Arnaldus astrologus? La astrología en la medicina de Arnau de Vilanova," *Medicina e historia*, 2 (2003), 1–15.
- 71 Arnau de Vilanova, *Tractatus de consideracionibus*, 251, line 18: "quod in meticolosis maxime debilem in intestinis contentivam habentibus contingere potest propter timorem, sicut ex problematibus Aristotelis et doctrina libri de morbo et accidenti sufficienter col-

also mentioned in the *Speculum medicinae* and in the comment on Galen's *De morbo et accidenti*.

The Use of *De anima*

During the 1290s, Arnau de Vilanova used Aristotle's treatise *De anima* in at least four works. In his *Tractatus de intentione medicorum*, he discusses the nature of the soul. When arguing that philosophical and medical truths can be harmonized, he refers to Aristotle's depiction of the soul as a harmonious combination of elements.⁷²

In the same section, Arnau also examines Galen and Aristotle's views on the nature of the soul. Aristotle had denied, in *De anima*, that the soul is a harmony or a ratio between the mixture of substances.⁷³ Those who sustain this view, Aristotle explains, do so on the grounds that harmony is a mixture and combination of opposites, because the body is the result of combinations of opposites. Contrarily, in his lost treaty *De demonstratione*, which Arnau mentions, Galen had maintained that the soul has to be understood as a harmony of qualities.⁷⁴ In order to resolve this conflict, Arnau focuses on the *complexio*, the first main principle of the operations of the soul in the body. This principle originates from the harmonious mixture of substances and is called the soul by the medical

ligitur." On this book see Peter De Leemans and Michele Goyens, *Aristotle's Problemata in Different Times and Tongues* (Leuven, 2006).

72 Arnau de Vilanova, *Tractatus de intentione medicorum*, 124, line 20–23: "Philosophus tamen animam demonstrare conatur non existere virtutem aliquam miscibilium corporum nec armoniam mixtorum proportionali concursu miscibilium causatam in eis."

73 Aristotle, *De anima*, I.4, 407b27–408a1 (ALD, trans. William of Moerbeke): "Armoniam enim quandam dicunt. Et enim armoniam temperamentum et compositionem contrariorum esse, et corpus componi ex contrariis. Et quidem armonia quedam ratio compositorum est aut compositio, animam autem neutrum possibile est esse horum. Amplius autem mouere non est armonie, anime autem attribuunt hoc omnes. Congruit autem magis de sanitate dicere armoniam, et omnino de corporeis uirtutibus, quam de anima. Manifestum autem si aliquis temptauerit reddere passiones et opera anime armonia quadam: difficile enim adaptare."

74 Arnau de Vilanova, *Tractatus de intentione medicorum*, 124, line 15–23: "Dicit enim magnus Galenius in multis librorum suorum, specialiter tamen in libro de demonstrationibus, essentiam anime fore complexionem, aut magis proprie miscibilium armoniam, illud idem scribens etiam de virtute in libro de rebus contra naturam. Philosophus tamen animam demonstrare conatur non existere virtutem aliquam miscibilium corporum nec armoniam mixtorum proportionali concursu miscibilium causatam in eis."

doctor because it is virtue that governs the body's operations.⁷⁵ Arnau here shows a great ability to speak of the soul while using medical categories according to a Galenic theory of the soul.⁷⁶ As Joseph Ziegler has argued, this approach links body and soul into a physical entity, something that Aristotle had rejected.

In the *Tractatus de humido radicali*, Arnau speaks of the nutritive soul and of nutrition as the first act of the soul while referring to Aristotle's *De anima*.⁷⁷ Here, Arnau borrows that part of Aristotle's treatise that focuses on the nutritional aspects of the soul, according to which the first power of the soul is a virtue thanks to which all ensouled beings can live.⁷⁸ There is another, direct reference taken from the second book of *De anima*, where Aristotle says that food has a non-accidental relationship to not being animated.⁷⁹ Food is defined as the principle of generation, in which we should distinguish two powers, nutritional and growth.⁸⁰ Arnau subsequently mentions Empedocles' view, as recorded in Aristotle, stating that Empedocles did not correctly interpret the

75 Arnau de Vilanova, *Tractatus de intentione medicorum*, 125, line 3–11.

76 Ziegler, "Arnau de Vilanova: A Case-study," 296–297. On this question, see also Michael R. McVaugh, "Moments of Inflection: The careers of Arnau de Vilanova," in Peter Biller and Joseph Ziegler, eds., *Religion and Medicine in the Middle Ages* (York, 2001), 47–67.

77 Arnau de Vilanova, *Tractatus de humido radicali*, 300, line 573–574: "et hoc bene videns, Aristoteles dixit quod anima nutritiva est que est principium sui subiecti, vel in se vel in simili, et etiam propter hoc est"; and p. 300, line 557–559: "Dicunt enim quod nutritio (quemadmodum Aristotelis iam ostendit) est actus anime vel potentie eius per se et non corporis; non enim invenitur in aliquo corpore nisi sit animatum."

78 Aristotle, *De anima* II.4, 415a24–25 (ALD, trans. William of Moerbeke): "Quare primum de alimento et generatione dicendum est: uegetatiua enim anima et aliis inest prima. Et maxime communis potencia est anime, secundum quam inest uiuere omnibus. Cuius sunt opera generare et alimento uti." By the second reference *De Anima* II.4, 415b25–28: "Similiter autem et de augmento et decremento se habet: nichil enim detrimentum patitur neque augmentatur phisice nisi alitum, alitur autem nichil quod non communicet uita."

79 Arnau de Vilanova, *Tractatus de humido radicali*, 302, line 643–646: "Tale autem est alimentum, et hec est ratio sicut sapientes dixerunt supra quam Aristotelis fundavit dicta sua, et dixit in secundo de anima quod idem subiecto alens et augens et generans; dixit enim quod idem est salvans et augmentativum et generans factivum."

80 Aristotle, *De anima*, II.4, 416b11–16 (ALD, trans. William of Moerbeke): "Est autem alterum alimento et augmentatiuo esse: secundum enim quod quantum aliquod animatum, augmentatiuum, secundum autem quod hoc aliquid et substantia, alimentum est: saluat enim substantiam, et usque ad hoc est quousque alatur. Et generationis autem factiium, non eius quod alitur, set qualis id quod alitur; iam enim est ipsa substantia, generat autem nichil ipsum se ipsum, set saluat."

concepts of 'above' and 'below', which are not the same for every living being.⁸¹ Finally, Arnau also uses Aristotle's *De anima* in two comments on Galen's works. In his comment of *De malicia complexionis diverse*, he discusses the senses and alteration with a direct reference to Aristotle.⁸² *De anima* is invoked also several times in Arnau's comment on Galen's *De morbo et accidenti*.⁸³ In all of these discussions, he demonstrates a great concern for the qualities of the soul as applicable to the field of medicine – a concern he developed during his period as a teacher.

Conclusions

From the above, we may safely conclude that Arnau de Vilanova was familiar with a vast range of Aristotelian works, that he used him as an authority in all of his works, and that he tried to reconcile his views with the demands of medicine. We have seen that he cites a large number of logical works, and notably the *Categoriae*, *Topica* and *Analytica posteriora*. Likewise, he quotes from a wide

81 Arnau de Vilanova, *Tractatus de humido radicali*, 300, line 564–566: “Unde est etiam quod erraverunt dicentes (sicut Empedocles) quod esset actio virtutis corporis alicuius, sicut caloris ignei in quantum virtus ignis est”; Aristotle, *De anima*, II.4, 415b29–416a11 (*ALD*, trans. William of Moerbeke): “Empedocles autem non bene dixit hoc addens, augmentum accidere plantis deorsum quidem radices mittentibus propter id quod terra sic fertur secundum naturam, sursum autem propter ignem similiter. Neque enim sursum et deorsum bene accipit. Non enim idem omnibus sursum et deorsum et omni, set sicut capud animalium, sic radices plantarum, si congruit instrumenta dicere altera et eadem operibus. Ad hec autem quid est continens in contraria que feruntur ignem et terram? Distrahentur enim, nisi aliquid sit prohibens; si uero erit, hoc est anima, et causa augmenti et alimenti. Videtur autem quibusdam ignis natura simpliciter causa augmenti et alimenti esse. Et namque ipsum uidetur solum corporum et elementorum quod alitur et augmentatur, unde et in plantis et in animalibus putabit utique quis hoc esse quod operatur.”

82 Arnau de Vilanova, *Commentum supra tractatum Galieni de malicia complexionis*, 232, line 22: “Dicit ergo in parte prima quod in hoc conveniunt naturales philosophi apud consideraciones quas habent de sensibus, sicut patet secundo de anima Aristotelis, quod *sensus*, suple sensibilis, *cuiuscumque non est nisi in alteracione*. Sed passio, suple seu dolor, non sunt nisi alteraciones. Et ita sequitur quod *non fit passio nec dolor in hiis que iam integre alterata sunt*, quoniam iam in illis terminata est alteracio.”

83 See the study and edition of the fourth book of this commentary in Fernando Salmón, *Las Teorías de la visión en la medicina universitaria bajomedieval: estudio y edición crítica del Arnaldi de Villanova commentum supra tractatum Galieni de morbo et accidenti cum textu Galieni, lib. IV, c. 1288–1292/1295* [microfilm] (Bellaterra, 1991).

range of natural philosophy works, such as *Meteorologica*, *De generatione*, *Physica* and *De anima*, and the works on animals, to which Arnau refers frequently, especially in relation to physiological process. He also used the *Ethica* and the *Metaphysica*.

Of all of the works we have analyzed, two stand out for the number of citations: these are the *Tractatus de intentione medicorum* and the *Tractatus de humido radicali*. There are also two comments on Galen's works that include many Aristotelian quotations. As we have seen, all four works were written during the 1290s, when Arnau was teaching in Montpellier. We have also been able to observe that when Arnau mentions Aristotle, he seldom uses literal quotes. His paraphrasing method is not necessarily an indication that he had a lesser interest in Aristotle's *dicta* than in Aristotle's doctrine. It might rather be an indication that at least some of his 'quotations' come from intermediate works. Avicenna's and Galen's works, for example, played an important role in the transmission of Aristotelian ideas and debates. In addition, some of the topics presented by Arnau were common to the discussions among physicians and natural philosophers. An obvious example is the discussion about the heart as the *principium membrum*, on which Aristotle and Galen had held contrasting views and which had been discussed by some physicians even before Arnau.

Considering the wide range of Arnau's quotations of Aristotle, it seems impossible to assume that he used as his source a florilegium or a collection of extracts of authorities. A comparison between the florilegium of Paris, which was finished between 1267 and 1325, and Arnau's quotations of Aristotle leads us to believe that the florilegium was also not Arnau's source. To be sure, in his library, there was a "liber quo sunt multe auctoritates de diversis virtutibus" and also a "summam fratris Thome de Aquino que incipit Que sit auctoritas."⁸⁴ It also does not seem plausible that he used citations from a guide for students, although we have signaled above some similar formulations. When comparing Aristotelian quotations in Arnau's medical works and the guide for students at the thirteenth-century arts faculty at Paris and the florilegium of Paris, we have seen that there are only few matching phrases and references.

Arnau de Vilanova's entire genuine corpus seems to draw from a wide range of Aristotelian works. In fact, it must be obvious that his knowledge of Aristotle's works was broader than what was presented in the university curriculum. The image emerges of Arnau as a physician, who defined a novel theoretical model of medicine by following Aristotle's standards of natural philosophy, but while always stressing clearly the boundaries of the two disciplines. In this enterprise, he used Aristotle, who for him never ceased to be an authority.

84 Chabàs, "Inventario de los libros," 192, n. 63; 201, n. 335.