Where the Philosopher Finishes, the Physician Begins: Medicine and the Arts Course in Thirteenth-Century Oxford

ROGER FRENCH (*)

SUMMARY

Introduction. 1.—Medicine in the Arts course. 1.1.—*De sensu et sensato*. 1.2.—On the difference between the soul and the spirit. 1.2.1.—The Accessus. 1.2.2.—Technical terms. 1.2.3.—The glorious Hippocrates. 1.2.4.—Heart, spirit and pulse. 1.2.5.—Brain. 2.—Hearing, reading and writing. 3.—Incorporation and teaching. 4.—The theory of teaching. 5.—Conclusion.

ABSTRACT

In the thirteenth century the English universities were different from others, particularly those in the south of Europe, in two important ways: they taught more natural philosophy and less medicine. But the survival of students' notes from the second half of the century shows that in the formal course of lectures on natural philosophy attention was paid to medicine inside the arts course. The present discussion examines the nature of this medical material and the institutional and intellectual relationship between medicine and philosophy.

BIBLID [0211-9536(2000) 20; 75-106]
Fecha de aceptación: 10 de mayo de 1999

(*) Lecturer in the History of Medicine. History and Philosophy Department, University of Cambridge. Free School Lane. CB2 3RH Cambridge. United Kingdom.

INTRODUCTION

Aristotle's cycle of teaching a philosophy of nature at the Lyceum seems to have begun with the *Physics*, which explained the general basis of natural change, or motion. He then went on to explain how those general principles came into effect in a series of actual situations, from cosmology to the behaviour of earthly elements and their mixtures. He did not finish one work and then proceed to the next, but left each in an unpolished state so that it could be modified in the future, possibly in the next cycle of lectures and after more work by him and his colleagues. Modern editors often refer to the incomplete state of Aristotle's text, and probably he never came to a point where he wanted to present a polished version of the individual works. In this cycle, after the *Physics*, he often refers back and forwards to the other physical works to indicate how they were related, and at least once refers to «our original undertaking» as the enterprise of which they were all part.

Aristotle's later editors saw this coherence and generally assembled collections of Aristotle's physical works in a way that led from general principles to situations where form predominated over matter in one of the most complex and most important natural questions, the nature and actions of the soul. It was, of course, the human soul, and although *De anima* is not as big as the *Physics*, the works associated with it, the *Parva naturalia*, extend the range and importance of Aristotle's enquiry. Aristotle recognized that the proper study of mankind is man, and having given an account of man's body and soul, Aristotle observed that the natural end-point of a philosophy of nature would be medicine. He did not teach medicine at the Lyceum, because it was a productive and not a liberal art, but he often indicates where the physical basis of man's nature can become corrupted.

Much of this was recognized when the masters of the medieval universities began teaching from the physical works. This is not the place to retell the story of the invention of medieval natural philosophy. It must suffice to recall that the use of the physical works was at first confined to Salernitan medical men in the later twelfth century and then, more systematically and often from new and incomplete translations, by the masters of the northern universities. In the first half of the thirteenth century, while the physical works were banned in

Paris (1), they were studied intensively in Oxford, generating expository commentaries by masters such as Adam of Buckfield. In the second half of the thirteenth century, when the bans were lifted in Paris, the earlier English interest in the physical works led to the production of an «Oxford» or «English» gloss, which became the common property of a number of masters and their students: for half a century or so, it was the English way of teaching the physical works. Notes from lectures were written in the ample margins of the thirteenth-century textbook of natural philosophy (2).

Although medical faculties came to be established in the medieval English universities, they were neither important nor large. The number of students passing through them was miniscule in comparison with faculties further south; and in contrast too with the universities of Spain and Italy, not everyone thought that university medicine was necessary or desirable (3). What *was* important in English education was getting the MA, or more precisely incepting in the corporation of masters. Every well-educated man was a master, either of the secular schools or of those of the Orders of Friars, and everyone agreed that the physical world was an Aristotelian place. Such an educated man might well wish to extend his learning into medicine. A university was not necessary for this, and he did not necessarily fall into (our) category of «doctor»: he might give advice of a medical nature to the great and the good as a prelate.

It is thus of interest to note that students hearing standard (4) lectures on the physical works in Oxford in the second half of the

(1) On the Parisian bans, see DENIFLE, Heinrich (ed.). *Chartularium Universitatis Parisiensis*, Paris, 1889, vol. 1.

(2) The *corpus vetustius* was the «older» collection of Aristotle's physical works, in use for the second half of the thirteenth century. Recognized as a stage in the «reception» of Aristotle's works because of its textual content, its function as a textbook, partly demonstrated by its annotations, has hardly been recognized. For the reception of Aristotelianism, see LACOMBE, George *et al. Aristoteles Latinus*, Roma, La Libreria dello Stato, 1939-1945, and its *Pars Posterior*, Cambridge, Cambridge University Press, 1955.

(3) See GETZ, Fay. *Medicine in the English Middle Ages*, Princeton, Princeton University Press, 1998, esp. chap. 1.

(4) «Standard» because the lectures are not the individual interpretations of single masters, but an agreed apparatus, rather like the «ordinary gloss» on the Bible.

thirteenth century were given an introduction to medicine in more detail than the Aristotelian texts would seem to warrant (5). They were reading these *libri naturales* in the sequence suggested by the earlier commentators, beginning with the *Physics*, but the cardinal point was in *De sensu et sensato*, one of the *Parva naturalia*. It is here that Aristotle argues that the natural philosopher should acquaint himself with the first principles of health and disease (but not, of course, with the techniques of treatment), because these can occur only in living things (the subject of this part of the «original undertaking») (6). This became codified as the apothegm «where the philosopher finishes the physician begins»: *quia ubi naturales terminant ibi incipiunt medici ut dicitur in libro de sensu et sensato*, as the Oxford masters said (7). It was an axiom that had served the doctors of the Middle Ages well. It was picked up by Isidore (8), and it was just what the doctors at the time of the new universities wanted everyone to think. By basing the theory of medicine firmly on the new philosophy of Aristotle they could strengthen it immeasurably, even to the extent of eventually overcoming the traditional suspicion of the greedy and less than honest doctor.

In fact an important part of the background of the story told in this chapter is the attempt by medical men to secure a place in the incorporated

---

See BURNETT, Charles. The Introduction of Aristotle's Natural Philosophy in Great Britain: A Preliminary Survey of the Manuscript Evidence. *In*: *Aristotle in Britain during the Middle Ages*, Turnhout, Brepols [Rencontres de Philosophie Médiévale], 1995, pp. 21-50 and FRENCH, Roger. Teaching Aristotle in the Medieval English Universities: *De plantis* and the Physical *glossa ordinaria*. *Physis*, 1997, *34*, 225-296.

(5) The MSS containing the Oxford gloss in an English hand used in this study are: London, British Library, Royal 12 G II [henceforth II]; Royal 12 G III [henceforth III]; Royal 12 G V [henceforth V]; Harley 3487 [henceforth H 3487]. Durham, Cathedral, C III 17 [henceforth C III 17]. Vatican, Urb. Lat., 206 [henceforth UL 206]. Nürnberg, Cent. V 59. Escorial, F II 4.

(6) *De sensu et sensato* 436a. Aristotle adds that it was not uncommon for philosophers to finish off their books with a discussion of medicine and for doctors to begin theirs with philosophical principles.

(7) C III 17, f. 382r.

(8) GETZ, note 3, p. 48.

university. The rise of the northern universities as formal groupings of masters was approximately coincident with the translation of the physical works of Aristotle into Latin. Although the Salernitans has been using some of these works for several decades, in the north we seem to see this translation and use as the business of philosophers. In the previous century, the medical man had been recognized as something of an expert on the physical world and its microcosm, the human body, and he was often called a *physicus*, because he studied *physica*. But some of the men involved in translating the new Aristotle thought that they alone knew what real natural philosophy was and scorned the trade of medicine. Alfred of Shareshill, one of the first translators and commentators of the texts in question, considered himself to be a philosopher, and sneered at the doctors as mercenary treaters of diseases (9). There was ample justification in the educational division-of-the-sciences literature for regarding purely intellectual topics such as natural philosophy as superior to manual and productive arts such as medicine (10); and it must have been partly because medicine was a vocational subject that Aristotle, the model philosopher of the new arts course, did not extend the course at the Lyceum into medicine.

This attitude towards doctors cannot have made it easier for them to have secured a place for their subject in the northern universities. Perhaps before the doctors succeeded in establishing their faculty at Oxford the philosophers gave little attention to medicine. An example is Adam of Buckfield, who commented on perhaps all of the physical works of Aristotle before the end of the 1240s; that is, before the Oxford medical faculty flourished, before the philosophy statutes, and while the physical works were still banned in Paris. His commentary on *De differentia spiritus et anime* does not mention me-

(9) See BARACH, Carl Sigmund (ed.). *Excerpta e libro Alfredi Anglici De motu cordis item Costa-ben-Lucae de differentia animae et spiritus*, Innsbruck, 1878, p. 94.

(10) On the division of the sciences see, for example, GUNDISSALINUS. De divisione philosophiae. *In*: Clemens Baeumker; Georg Friedrich von Hertling (eds.), *Beitäge zur Geschichte der Philosophie des Mittelalters*, Münster, 1906; and BUTTIMER, C. H. (ed.). *Hugonis de Sancto Victore Didascalicon*, Washington, De Studio Legendi, 1939.

dicine as a topic (11). He does not take the opportunity of enlarging on a number of topics dealt with by later teachers: the skills of the «most glorious» Hippocrates, and the differences of opinion between the philosophers and physicians on the topics of the number of ventricles of the heart, the origin of the veins, arteries and nerves, and the function of the ventricles of the brain. These came to be very common topics in the universities, but perhaps only after the medical men had secured their subject there and the mode of teaching had shifted from commentary to disputed question (12). The purpose of Adam's commentary was quite different, namely, to expound the structure of the text so that the reader and Adam's student audience could understand its morphology and its author's intentions in all of its parts. Strictly, he was an expositor rather than a commentator in the full sense, for a commentator would have—after his exposition—illuminated obscurities and resolved problems such as those arising from a comparison with other authors and other subjects.

The chronology of these changes is important. In summary, Adam of Buckfield was commenting on the physical works in and perhaps before the 1240s, when Aristotle was still banned in Paris, and while a commission set up by Pope Gregory IX in 1239 to excise the offensive parts of Aristotle was still sitting. Traditionally, Roger Bacon began to teach natural philosophy in Paris in the mid 1240s and by 1252 the English nation in Paris was in a position to specify *De anima* as a necessary part of the curriculum. The university soon followed with a complete list of the *libri naturales*. The «older collection» of the physical works, the *corpus vetustius*, arose—apparently before the promulgation of these statutes—to provide the relevant texts (13). It may have arisen in Oxford: one of the oldest exemplars was written (and annotated) in an English hand and twenty *peciae* of it were complete by 1250 and parts of it may be a decade older (14).

---

(11) See FRENCH, Edmund. *Adam of Buckfield and the Early Universities*, Ph.D. Dissertation, University of London, 1998, pp. 131-143.

(12) See CALLUS, Daniel A. Introduction of Aristotelian Learning to Oxford. *Proceedings of the British Academy*, 1943, *29*, 229-281.

(13) See DENIFLE, note 1 and LACOMBE *et al.*, note 2.

(14) UL 206: see LACOMBE *et al.*, note 2.

1. *MEDICINE IN THE ARTS COURSE*

1.1. *De sensu et sensato*

Thus, when we meet references to medicine in lectures to bachelors hoping to become Oxford masters, we are looking (that is, within the Oxford gloss) at a discipline that had not yet effectively incorporated itself in the university. No English-educated medical man is known from the thirteenth century and there was no degree-giving faculty of medicine before the fourteenth (15). The natural-philosophy lecturer was not looking over a faculty wall at what the medical teachers were doing but at medical writings generally. But in what he said we can see some of the materials and techniques with which it would have been possible to defend and develop institutional medicine.

Let us look first at *De sensu et sensato*. It is generally in contrast to the medical man that the teacher of natural philosophy calls himself a *naturalis*. A *naturalis* considers (as Aristotle had said) the first principles of health and disease, whereas a practical *medicus* does not (16). Not all medical men were of course simply practical, but where they studied principles, the principles were secondary or «proximal» (17). Even when medical men thought about the very principles of life and death, they were *different* principles (18). The *naturalis* of course realized that medicine had its theoretical, *speculative*, side (19); but the differences between and the relationship of the two disciplines was one of subalternation. This too was an Aristotelian doctrine and explains how the principles of

(15) GETZ, note 3, p. 17.

(16) H 3487, f. 216v: «[*de medicina*] idest quidam medici ut practici incipiunt ad practicam medicine et non considerant prima principia sanitatis et egritudinis de quibus tamen considerat naturalis». Also II, f. 382v; III, f. 245r; C III 17, f. 363r.

(17) III, f. 245r: «[*de medicina*] idest ad proxima principia que sunt de consilio medici, et non considerant prima principia sanitatis et egritudinis de quibus tantum considerat naturalis». Also II, f. 382v.

(18) Escorial, F II 4, f. 181r: «[*prima*] idest que sunt eadem cum primis principiis vite et mortis licet principia de quibus habet medicus considerare non sint eadem *quare* etcetera». H 3487, f. 216r.

(19) CIII 17, f. 363r.

a subalternated *scientia* are taken from the discipline to which it is subalternated. The doctors, probably from Avicenna, were much concerned with the impossibility of questioning, within medicine, axioms imported from natural philosophy: it was wrong even to try. What is proved in a *subalternating* discipline must be accepted in a *subalternated* discipline (20).

Subalternation was an intellectual justification of institutional distinctions. The *consortium* of teaching masters was a guild of teachers. Like other guilds, this was recognised in law, provided that it plied a real trade. Being recognized, it was taken as the only legitimate authority on the trade it practised. Where that trade was selling knowledge, the philosophers and later the medical men pronounced their own curricula and authorities. The medical faculty became almost a guild within the broader *consortium* of masters, and in Italy at least even specialists such as anatomists had guild-like autonomy. A man could move from being a professional teacher of philosophy to one of medicine and them perhaps to anatomy. In doing so he changed his mode of expression, his ancient authorities and his professional conclusions. Medieval philosopher-physician disputes were events that beat the mutual bounds of subalternated disciplines, not failed searches for a physical truth.

Within medieval natural philosophy itself, the sequence of Aristotle's *libri naturales* was seen partly as a concatenated subalternation. Even the non-Aristotelian *De differentia spiritus et anime* was said—by Adam of Buckfield—to be subalternated to *De anima*. Moreover, it was the last in that branch of subalternation, a «completive» work because it dealt with all spirit, the common agent of all actions of the soul (21). Even more

(20) Nürnberg, Cent V 59, f. 221r: «sicut illud quod probatum est in scienta subalternante debet supponi in scientia subalternata». Gentile da Foligno (d.1348) adopts from Avicenna almost a moral doctrine that the medical man should not try to prove the axioms he borrowed from philosophy: «medicus debet illa credere et non probare and ergo medicus debet credere sua principia et non debet ratiocinari de eis, idest probative procedere». See *Primus Avi. canon. Avicenne medicorum principis canonum liber una cum lucidissima Gentilis Fulg. expositione*, Venice, heirs of Octavian Scot, 1520, f. 9v.

(21) «Ideo simul determinat de anima et etiam de differentia spiritus ad animam, et quia sua scientia completur in hac differentia ideo ab illo sicut a completico

properly, the *Parva naturalia* took their principles from *De anima* (22). Thus *De sensu et sensato* was a book *subalternatus* from *De anima*, and at the same time *subalternans* to medicine. The connexion between the two disciplines, the point at which philosophical axioms were delivered to medicine, was the *Isagoge* of Johannitius. This was the first work in the medieval textbook of medicine, the *Articella*, and at the time of the Oxford lectures, the only one containing any theory of medicine. It is a very short digest of the principles of Greek medicine, so compact that the Salernitans and others may have searched out bigger works, of Aristotle, Galen and even Avicenna, for the purpose of explaining it.

In indicating to his students (who were not yet philosophers) that medicine was subalternated to philosophy, the master was also showing them many of the fundamentals of medicine: necessarily so, for these were the unassailable philosophical axioms that the medical man should not question. Nothing was more fundamental to the peripatetic world picture than the four elements and the four elementary qualities, shared in pairs between the elements. It was interaction between the qualities that produced the mixed bodies and actions of the terrestrial world, the business of the medical man. Broadly speaking, the mixture of the qualities produced a *complexio*, and even the cause-and-effect action of the celestial bodies on earth was a «complexioning». «Complexion» was also a medical term, with the same general meaning—a specific mix of qualities. *Temperamentum* was a related term and both could apply either to the solids of the body (composed ultimately of the elements) or to the humours (characterized principally by their elementary qualities). The fundamental fact of Greek theory was that health was a balance of qualities, whereas disease was an unbalanced state.

---

denominatur iste liber, et est ultimus inter libros subalternatos libro de anima». See FRENCH, note 11, p. 131. Because more than one discipline could be subalternated to a single preceding discipline, the classification could be a branching one. Adam expresses this in his introductory *accessus* to *De differentia spiritus et anime* by means of the important question, «To what part of philosophy does it belong?»

(22) Escorial, F II 4, f. 181r: «[*consequens est*] scilicet in hoc libro et in quibusdam sequentibus libro de anima subalternatis aliquo modo». And «[*subiaceatur*] idest supponantur in hoc libro et in relinquis sequentibus sicut determinata in superiori scientia». Also III, f. 245r; II, f. 382v.

To target the point of contact between the two disciplines, the Oxford teacher selected a passage from the *Isagoge* where Johannitius says there are three qualities of the body, health, sickness and a state of neutrality. There are a number of things to note about this. First, it is a reference to Galen's *Tegni*. The *Isagoge* was generally thought to be an introduction to the *Tegni*, Galen's summary, as an old man, of the principles of medicine. The search, then, seems to have been for a greater explanation and understanding of the theory of medicine and its principles; the *Tegni* was added to the textbook of medicine, the *Articella*, at some point in the thirteenth century, and its discussion of health, disease and neutrality caused endless problems for the schoolmen. Second, it is concerned with the *medical* definitions of health, disease and neutrality, based on the *philosophical* and subalternated axioms concerned with complexion: «Health is a temperament perfecting natural things according to the course of nature; disease is distemper outside the course of nature producing a perceptible lesion; neutrality is neither health or disease» (23). Here «temperament», «natural things» and «course of nature» are basic technical terms within the medical tradition and the Oxford arts student was being introduced to them.

Third, the passage just quoted is a quotation from the *Articella*. It is characteristic of the Oxford gloss that it includes large postils from well-known commentators or authors, such as Alfred of Shareshill, Boethius or as here Johannitius. These in a sense are not regular members of the Oxford gloss, unlike a large number of postils that begin with the anonymous «Commentator». That is, these postils, as quotations from well-known authors, do not appear with the regularity of the others across the range of manuscripts, are often in locations on the folio not tightly tied to a textual location, are often introduced by a little drawing of a head or other grotesque (in one case at least a head and a tail serve as quotation marks), and are generally rather more verbally precise

(23) Escorial, F II 4, f. 181r: «*de sanitate et infirmitate* Ioanicius corporis qualitates sunt 3es sanitas, egritudo, aud neutrum. sanitas est temperamentum perficiens res naturales secundum cursum nature. egritudo est intempa extra cursum nature. Unde fit sensibilis lesionis effectus. neutrum quidem est quod nec sanum, nec infirmum, sed neutralis qualitatis». Also II, f. 382v; III, f. 245r; C III 17, f. 363r; H 3487, f. 216r.

than the postils that derive from lectures (which contain mistakes characteristic of an aural transmission). It is almost as if these large, named postils are the student's «homework» copied from an exemplar.

The other quotations introduced by the name Johannitius (variously Iohanicius, Ioanicius and Ionicius) are also quotations from the *Articella* and there seems little reason to doubt that the text was freely available in thirteenth-century Oxford. Johannitius' remarks on the four ages of man had not only an educational «know thyself» purpose but, because they included the complexional attributes of each age, provided one of the fundamental principles of the *scientia* of regimen, the doctors' preferred form of practice. The doctor who knew that adolescence lasted until the 25th year and was hot and wet in complexion, that youth ended at 35 or 40 and was hot and dry, that maturity, cold and dry, lasted until you were 50 or 60 and that old age was marked by the accumulation of phlegm, also knew how to handle the diet, drink, sleep, exercise and other non-naturals, each of which had its own complexion or an effect on the complexion of the patient in each of his ages (24). For example, the Oxford student also learned from Johannitius that sleep cooled and moistened the body externally, but warmed it internally, whereas waking had the opposite effect, additionally drying the body internally (25).

Some of the medical content of the Oxford gloss derives from Avicenna. Very many postils throughout the manuscripts begin with a

(24) H 3487, f. 216r: «*Iuventus et senectus* Iohanitius 4 sunt etates adolocentia, iuventus senectus et senium. prima est complexionis calide et humide in qua crescit corpus et augetur usque ad visesimum quintum annum vel trisesimum. Iuventus sequitur que est calida et sicca et perfectum sine diminutione corpus conservat que tricesimo quinto vel quartasesimo anno finitus. post sequitur senectus, frigida et sicca in qua incipit corpus diminui tamen virtus non deficit. senium sequitur quinquagesimo anno vel sexagesimo collectione fleumatici humoris frigidum et humidum in quo continue usque terminum vite apparet defectus virtutus». Also C III 17, f. 363r; III, f. 245r; II, f. 382v.

(25) H 3487, f. 216r: «Johannitius sompnus naturam corporis immutat primum quidem infrigidat exterius, et calefacit interius, qui si fuerit prolixus infrigidat et humectat vigilus vero immutatur corpus, qui extrinsecus calefacit corpus. Intrinsecus autem infrigidant et desiccant». Also III, f. 245r; C III 17, f. 363; Escorial, F II 4, f. 181r.

sign that abbreviates the word *commentator*. He is generally anonymous, unlike Alfred and Boethius, and in some cases it must be Averroes. Both Arabic authors commented on Aristotle's physical works, but Avicenna's vast medical treatise, the *Canon*, had been available (in principle) since its translation in the eleventh century by Gerard of Cremona, whereas Averroes' *Colliget* was not translated until the late thirteenth century, certainly after some of these manuscript lecture notes had been written. So it is likely to have been with Avicenna in mind that the teachers of the Oxford gloss pointed to the cardinal point where the axioms of natural philosophy passed over into medicine. The prime elementary qualities are the first principles of health and disease, of generation and corruption, of growth and diminution, and of sleeping and waking; the «proximate» principle of health and disease (more the direct concern of the doctor) is the proportion of the qualities in the humours. The doctors' direct concern with life and death here involves the rather detailed and very medical concept of «radical complexion»: what seems to be involved here is what historians call «radical moisture» (26), but the postils in the manuscripts do not expand the concept in this way.

The manuscript postils do, however, continue the discussion in a detailed medical way. It is quite characteristic of these postils that they are often made up of a series of glosses to the same lemma of the text, each introduced with the phrase *vel sic*, «or thus». These are *alternative* explanations for the same glossed term, and sometimes are of a quite different kind from that preceding, perhaps grammatical, philosophical or textual. But some *vel sic* alternatives express the same explanation in different language, and it seems here that «radical complexion» as a proximate principle of life is heat and a humour mixed in such a proportion and having the kind of power that produces the possibility of uniting with the soul and performing its functions (27). These, for a

(26) See McVAUGH, Michael. The «Humidum radicale» in Thirteenth-Century Medicine. *Traditio,* 1974, *30,* 259-283.

(27) C III 17, f. 363r: «*prima principia* sanitatis et egritudinis sunt quatuor qualitates prime ut vult commentator super principium de morte et vita dicens ibidem quod generatio et corruptio crementum et diminutio, sompnus et vigilia ... in corpore animato non attribuuntur nisi quatuor qualitatibus scilicet calido etc. principia autem proxima sanitatis et egritudinis possunt dici proportionalitas et

student who was not yet a philosopher, are comparatively deep waters of theoretical medicine. The doctrine that complexion was so fundamental a matter that it could explain the proper workings of the bodily parts was taken up and developed in a formidable way by Gentile da Foligno and others a few years later; its roots lie in the medical theory codified by Avicenna rather than in Galen's experiments with brain, nerves and muscles.

1.2. *On the Difference between the Soul and the Spirit*

Perhaps the only regular member of the group of texts that made up the textbook of natural philosophy that was known *not* to be by Aristotle was a short text, *De differentia spiritus et anime* (28). The importance of the work is that it shows how Greek philosophical doctrines came to be accepted within a Christian society. That it was known not to be by Aristotle yet was included in an otherwise predominantly Aristotelian philosophy course shows that this importance was recognized. The Christian knew from his Bible and from the Fathers that «spirit» could be the breath of God, perhaps breathed into the face of Adam, or moving on the face of the waters, or a Person of the Trinity. Rather less directly, «soul» was the immortal part of man. But Greek philosophical and medical doctrines of soul and spirit carried a large baggage of connotations, most of them physical, that had little to do with biblical and patristic doctrine. Of course, the history of the assimilation of Greek terms and thought began early in the history of the church, but clearly a major step had to be taken when the physical works of Aristotle, largely unknown in the West since the fall of Rome, suddenly became known in the late twelfth century.

De differentia spiritus et anime had been written by Costa ben Luca, a Syrian Christian, in Baghdad in about 870. He used Greek medical and

---

disproportionalitas in quatuor humoribus. vita autem et mors immediate radicantur in complexione radicali. vel possumus dicere sic quod proxima principia vite sunt calor et humor mixti in tali proportione et virtute se habentes quod sic possibilis unio anime cum eis et quod anima per eos possit operari operationes debitas ...». Also II, f. 382v; III, f. 245r; Escorial, F II 4, f. 181r.

(28) For the Oxford gloss on *De differentia spiritus et animae* see FRENCH, note 11.

philosophical sources (29) to answer a question put to him by an important friend, and his text thus represents part of the early medieval practice of making translations of classical materials. Costa's Arabic text was translated in 1130 into Latin by John of Seville at the instance of Raymond, the Archbishop of Toledo who, we may suppose, was interested in the religious, philosophical and medical use of the terms *spiritus* and *anima*. We are concerned with this text, then, at three levels: what Costa excerpted from the ancient writings; what John made of it in a Latin that was probably less sophisticated in its technical terminology than Costa's Arabic; and how it was understood by the Oxford masters of the second half of the thirteenth century.

1.2.1. The Accessus

Overall, the Oxford gloss had a number of functions in the context of the classroom. First, it served to introduce the text of Costa. It was common in the schools of the West to follow an Alexandrian pattern and follow an *accessus ad auctores*, a good example of which begins John of Alexandria's commentary on *De sectis*. John's *accessus* consists of a number of questions asked of a new text to help the students come to grips with it intellectually. A fragment of this survives in the thirteenth-century common gloss in relation to the title of the work, where the Oxford masters said the intention of the author was clear, that is, to make out the differences between the soul and the spirit (30). But by the time Aristotle's works were better known, in the second half of the thirteenth century, a more popular *accessus* was based on the four Aristotelian causes, so that items such as the intention of the author and

(29) He used Plato's *Timaeus* and *Phaedo* and the works of Aristotle and Theophrastus on the soul, presumably including Aristotle's *De anima*. Costa's medical source was Galen, whose work «which aims to bring into harmony certain sayings of the most glorious Hippocrates and Plato» was clearly the *De placitis Hippocratis et Platonis*. Costa also used the work of Galen «which treats of the procedures of surgery and of the functions of the parts», which is probably *On the Use of the Parts* rather than *On Anatomical Procedures*.

(30) II, f. 358v: «[*spiritus et anime*] sic tangit de quo est intent[i]o». Also H 3487, f. 202v.

the purpose of the work were covered by a discussion of the final cause of the work. The material cause was often the subject matter of the book, so that medical texts, for example, were often said to have the human body as their material cause (31). The formal cause related to the divisions of the work and its mode of procedure, and the efficient cause was the author (correctly named) in the act of writing. Thus where Costa says he is writing by excerpting from the ancients, the Oxford gloss identifies the efficient and material cause of Costa's text (32). Where Costa says he is writing with the greatest brevity (because he knows how busy his friend is) the Oxford gloss identifies *maxima brevitate* as the formal cause of the text, that which explained its shape and size (33). «I believe that I have answered your request», said Costa, and his words were glossed, «And here he touches on the final cause», indicating that the purpose of the work was to satisfy a friend (34).

1.2.2. Technical Terms

One of the most important functions of the common gloss was to clarify obscurities. Very often, where the text has simply a pronoun, the gloss gives the noun for the sake of clarity. The same applied to adjectives. Other obscurities were caused by the special use of known terms or the presence of unknown terms, such as transliterations from the Arabic. Thus where Costa seems to say that the spirit is carried from the heart to the body «in the *assurianet*, that is, in the veins of the pulse», his words were found obscure in thirteenth-century Oxford, where «veins of the pulse» were much better understood as «arteries», making the

(31) See, for example, Gentile's commentary on the third book of Avicenna's *Canon* (1522), f. 1r (note 20).

(32) II, f. 358v: «[*ecce tibi*] per hoc tangit causam materialem cum efficientem et cum efficiente remoto per hoc quod sub[iungit] libro». Also H 3487, f. 202v; C III 17, f. 381r.

(33) II, f. 358: «[*maxima*] sic tangit causam formalem cum sua causa». Also V, f. 222r and H 3487, f. 202v.

(34) II, f. 358v: «[*credo*] per hoc tangit causam finalem que consistit [in hoc quod] est satisfactere pecicum illius cui scr[ipsit]». Also V, f. 222r and C III 17, f. 381r.

Arabic transliteration unnecessary (35). But «artery», *arteria*, itself was a technical term and needed explaining in the common gloss, particularly since the windpipe was called the «harsh artery» and carried air rather than spirit (36). «Artery» was also a technical medical term that avoided the older and clumsy «pulsatile vein» used, for example, by Adam of Buckfield writing in a philosophical rather than medical way (37). One exemplar of the gloss has an unusually large postil explaining what is meant by «artery» as a technical medical term (it includes the «artery of the voice» otherwise known as the «harsh artery», our trachea) (38).

Another obscurity concerned the nerves. The common gloss points out that Costa did not mention the nerves serving the sense of touch, because touch is a sense of the whole body and not just of a single sense organ. Nor did he mention the nerves of the sense of smell, perhaps

(35) «Spiritus est quoddam corpus subtile quod in humano corpore oritur ex corde et fertur in *assurianet*, idest in venis pulsus ad vivificandum corpus; operaturque vitam et anelitum atque pulsum». See FRENCH, note 11, p. 290. The gloss: II, f. 359v: «[*pulsum*] et est pulsus secundum medicos motus cordis et arteriarum ad infrigidacionem caloris innati et ad expulsionem fumorum superfluorum ut postea habebitur». Also V, f. 222r and C III 17, f. 381r.

(36) C III 17, f. 381r: «Item nota quod pulsus est motus cordis et arteriarum factus secundum elevacionem et depressionem ad infrigidandum innatum calorem. Item nota quod arteria est corpus rotundum oblongum ad instar cannalis a corde incipiens per totum corpus diffusum aerem vocalem et spiritum continens».

(37) This is explicit in one exemplar where a fragment of Adam's commentary is used as a supplement or component of the Oxford gloss: «Nota quod in corpore humano sunt duo genera venarum scilicet vene non pulsatiles in quibus defertur sanguis per totum corpus et ie[iste?] vocantur communiter vene et vene pulsatiles in quibus defertur spiritus vitalis per totum corpus et iste vocantur communiter arterie. et in hoc libro vocantur vene pulsus». C III 17, f. 381v.

(38) C III 17, f. 381r: «Nota quod tres sunt spiritus secundum medicos unus qui oritur in corde et extenditur in venas pulsatiles et iste dicitur spiritus vitalis. alius est spiritus naturalis qui oritur in epate et extenditur ad venas non pulsatiles. tertius est spiritus animalis qui oritur in cerebro et extenditur per concavitates nervorum de duobus autem scilicet vitali et animali intendit in hoc libro. Item nota quod pulsus est motus cordis et arteriarum factus secundum elevacionem et depressionem ad infrigidandum innatum calorem. Item nota quod arteria est corpus rotundum oblongum ad instar cannalis a corde incipiens per totum corpus diffusum aerem vocalem et spiritum continens. *Spiritus est quoddam corpus* etc.».

because the brain itself was reckoned the instrument of smell (39). Indeed, the gloss tackles the long-standing confusion of the word *nervus* itself. This word was used in Latin for any threadlike structure in the body, matched by *neuron* in the Greek. When the Alexandrians discovered motor and sensory nerves, they used *neuron* in a technical sense, and in Latin *nervus* carried both meanings, distinguished by context. But the picture was confused because Aristotle, who had no knowledge of the nervous system, described sinewy threads in the heart. These appeared in Latin as *nervi*, and could be used as evidence by those who argued that Aristotle *did* know about nerves and said that they originated in the heart. The Latin translation of the Arabic paraphrase of Galen's *De usu partium* also has *nervi* in the heart, which seemed to confirm the pseudo-Aristotelian view. The common gloss enlarges on Costa's distinction between hard (that is, sinewy) and soft nerves, which it says are hollow and carry animal spirit from the brain; and it contrives to lessen the force of the contradiction with Aristotle, who in the new translations could be seen as saying that there were no nerves in the brain (40).

1.2.3. The Glorious Hippocrates

The common gloss draws attention to the different opinions of the medical men in a number of areas. Probably nothing could be taken for granted about the student's previous knowledge of medicine, for even

(39) II, f. 361v: «[*accidit*] non videtur mencionem de nervis transmissis ad instrumentum tactus quia tactus non viget in una parte corporis determinata sed ubique; nec ad instrumentum olfactus, quia tam principium est cerebro quam sit cerebrum vel aliqua eius pars, dubitari posset tum dici quod tangit per hoc quod dicit sextum descendit ad exta idest ad quedam interiora et forte cerebrum est in mediatum instrumentum sensus odoratus vel adminus eius instrumentum immediatius est adherens cerebro quam alicuius alterius». Also C III 17, f. 383r.

(40) C III 17, f. 383r: «Nota quod dua sunt genera nervorum. sunt enim quidam nervi solidi qui sunt solidissima pars corporis ... et ille sunt ad sustamentum corporis non ministrantes sensum et motum ... alii sunt nervi concavam in quibus deferuntur spiritus animales a cerebro ... Nec contradicit huic quod [Aristoteles dicit] in de [animali]bus quod in cerebro non est nervus quia ibi loquitur de nervo proprie dicto qui solidus et non concavus».

the word «surgery» had to be explained (41). We can examine a number of topics in John's Latin text in turn. The first is the reputation of Hippocrates, the Father of Medicine. Then there is a group of topics centred on the nature of the spirits and the actions of the soul. The Oxford teacher could often draw from contemporary medical men details not available in the text he is glossing, that of Costa ben Luca. Where Costa refers to «the most glorious Hippocrates» it is probably simply an honorific for the single Father of Medicine, famously reconciled with Plato by Galen. John of Alexandria, the early medieval commentator on Galen's *De sectis*, also called Hippocrates «glorious». But for the Oxford teacher the term recalled a precise location in a Hippocratic text. This was the *Prognostics*, where the author, believed to be Hippocrates himself, refers to the «glory» to be acquired from the good use of techniques of prognostication: Hippocrates was glorious to the Oxford expounder of the common gloss because he prognosticated (42). Medieval doctors were highly alive to the mechanisms of generating a good image for themselves, and the fees that followed, and it seemed as though the glory that Hippocrates mentioned could be achieved by them. The image of the physician raising the urine flask to catch the light in order to prognosticate is almost a trademark of the medieval physician, and was a display to indicate to the onlookers that the physician could tell the past, present and future state of the patient. The *Prognostics* was an important component of the medieval medical textbook, the *Articella*, and some of its techniques were codified, along with other scattered remarks in Greek medical writings, by the Byzantine Theophilus in his tract on prognosticating from urines. This too was part of the *Articella*, and so again it seems likely that this collection of short works was known to the philosophy teacher.

---

(41) Costa uses «surgery» in place of «anatomy» when describing Galen's *De Usu Partium*: «... ex libro quoque galieni quem fecit de concordia quarumdam sententiarum gloriosissimi ypocratis atque platonis et ex libro eiusdem galieni quem in opere cirurgie et in utilitate membrorum». See FRENCH, note 11, p. 289. The gloss explains «surgery» in the simplest terms: «[*in opere cyrurgie*] Sirurgia est ars curandi vulnera et accidentales lesiones venientes ab extra». V, f. 221v.

(42) II, f. 358v: «[*ipocratis*] gloriosissimi quia inter omnes loquentes de medicina prognostica laudis debetur ypocrati». Also V, f. 221v; H 3487, f. 202v and C III 17, f. 381r.

1.2.4. Heart, Spirit and Pulse

A second area relating to both philosophy and medicine was concerned with the ventricles of the heart, important in the production of spirit. It came to be a topic of much dispute in the Middle Ages why Aristotle had said that the heart had three chambers and Galen had said two. Costa, writing «with the greatest brevity», does not mention the Aristotelian position. He speaks instead of the praiseworthy philosophers and medical men who were experienced in surgery in the living body and who thought that the heart contained two ventricles. He also used the term «surgery» for the dissections and vivisections that Galen used in *On the Use of the Parts*, so for him the term may have meant something closer to «dissection». If so, then he may be echoing the old story of the Alexandrians Herophilus and Erasistratus vivisecting condemned criminals, especially since he emphasizes the words «in the bodies of the living», which would be redundant in connexion with «surgery» in our sense (43).

The Oxford gloss, in contrast, gives the locations (44) for the Aristotelian view and explains how Costa, by ignoring him, contradicts Aristotle. It also gives the resolution of the problem (that the medical men take the middle and left ventricle as a single cavity) offered by Alfred of Shareshill in his *De motu cordis* (45). Books with this title

(43) «Et quidem ex laudabilibus medicorum atque philosophorum de his qui in corporibus viventium usi sunt opere cirurgie putaverunt quod in corde sunt duo ventriculi vel concavitates, una scilicet in dextra parte eius et alia in sinistra, et in his duobus ventriculis continetur sanguis et spiritus; sed in dextro ventriculo plus est de sanguine quam de spiritu; in sinistro vero plus spiritus quam sanguinis». See FRENCH, note 11, p. 290.

(44) In *De sompno et vigilia* and the animal books.

(45) II, f. 358v: «[*duo ventriculi*] aristoteles in libro de sompno et vigilia in fine prius docet quod iii talami sunt in corde, similiter in fine primi de animalibus dicit quod iii sunt ventriculi in corde et ita autor iste contradicitur aristotele, qua contraritate inter medicos et aristotelem recitat alvredus in libro de motu cordis et determinat docens quoniam sunt iii secundum aristotelem et quoniam sunt ii secundum medicos qui medium talamum et sinistrum reputant pro eodem». (H 3487, f. 203r). This gloss also appears in Paris, Bibliothèque nationale, lat. 12953, f. 276r, which adds that the physician is a philosopher concerned with sensibles: «Nota quod medicus qui sensibilis philosophus ponit spiritum esse medium inter corpus et animam in animalibus». (Alfred's text dates from about 1200).

became almost a genre of literature in the Middle Ages precisely because they dealt with the important problem that we are considering here, the location and nature of the soul and spirits. Alfred's became statutory in some universities (46).

Second, the vital spirit, generated in one of the two ventricles of the heart, was according to Costa carried in the «veins of the pulse» to the body to produce life, breath and the pulse. The Oxford gloss points out that «pulse» has an important medical meaning, for the doctors understand by it a motion of the heart and arteries that cools the innate heat and evacuates smoky wastes (47). Costa's text is more medical than the gloss: he says that the contraction and expansion of the heart produced the «pulse of the whole body» and that the pulse indicated the state of the heart and its own particular sufferings, inflicted either from neighbouring parts or from its own nature (48). Diagnosis from the pulse was a medical rather than philosophical affair and Costa is reflecting his medical sources. Philosophers had to know that the pulse was prognostic (49), but the gloss does not go into the technical details, observing that some aspects of the pulse were important only «for the medical men» (50). For the *philosopher*, in contrast, the pulse «is nothing

(46) See CALLUS, note 12, p. 238. Alfred's text was adopted by mid-century for the last part of the *scientia naturalis inferior*.

(47) II, f. 358v: «[*pulsum*] et est pulsus secundum medicos motus cordis et arteriarum ad infrigidacionem caloris innati et ad expulsionem fumorum superfluorum ut postea habebitur». Also V, f. 222r.

(48) «Cor enim colligatur atque extenditur, et per extensionem eius atque collectionem fit pulsus totius corporis, et ideo pulsus indicat esse cordis, idest eius passiones proprias tam equales, quam inequales atque diversas que fiunt causa diversi impedimenti eiusdem cordis quod accidit ei a semetipso, vel a quibusdam membris sibi vicinis». See FRENCH, note 11, p. 290.

(49) II, f. 359r: «[*inequalies atque*] pulsus ostendit passiones».

(50) C III 17, f. 381v: «[*pulsus indicat*] idest spiritus faciens pulsum scilicet medicis». C III 17, f. 381v: «[*semetipso*] et huius pulsus indicat medicis que sic innuit...». Since the Oxford gloss mentions the *Prognostics*, its author(s) would have been familiar with the *Articella*, another prognostic text of which was that on the pulse, bearing the name Philaretus.

more than the elevation and depression of the pulsatile vein» (51), which reaches the whole body (52).

1.2.5. Brain

The Oxford gloss reports extensively on what happens in the part of Costa's text that describes how the vital spirit, generated in the heart and transmitted to the arteries, is converted at the brain into animal spirit and enters the ventricles. The question was one of the ventricles of the brain and which powers of the soul were exercised in them. While Adam of Buckfield characteristically confines himself to the citation of lemmata and the subdivision of text between them, the Oxford gloss refers to the opinions of the medical men more on this topic than on all the others put together. Costa's text says that the brain is double, its parts being anterior and posterior. The anterior part contains two ventricles joined by a central common space. The posterior part of the brain contains a single ventricle, also communicating to the common middle space. Controlling access to the ventricles by the spirit is a worm-like body which moves, opening and closing the entrances to the ventricles (53). Galen had argued that the rear of the brain is hard and therefore suitable for memory and the initiation of motion, and the soft anterior matter of the brain was appropriate for the reception of the

(51) II, f. 359r: «[*totius corporis*] ... unde pulsus nichil aliud est quam elevacio et depressio vene pulsatilis». Also C III 17, f. 381v; H 3487, f. 202v; V, f. 222r.

(52) II: «[*totius corporis*] idest ad omnes partes corporis quia per cordis collectionem transferuntur spiritus venas replentes et elevantes et per cordis extensionem revocantur isti spiritus et per con[sequens] [depri]muntur vene unde pulsus nichil aliud est quam elevacio et depressio vene pulsatilis». Also C III 17, f. 222r; H 3487, f. 202v; V, f. 222r.

(53) «Cerebrum vero dividitur, in duas divisiones quarum una est anterior, que est maior, et altera posterior. Et in illa anteriori duo sunt ventriculi habentes introitum ad commune spatium, quod est in medio cerebri. In posteriori, vero habetur unus ventriculis faciens iter ad supradictum spacium quod est commune utrisque ventriculis qui sunt in anteriori cerebro ... Et in ipso transitu idest introitu per quem vadit spiritus, habetur quoddam pitacium, idest quedam particula de corpore cerebri, similis vermi, que elevatur et deponitur, in ipso itinere». See FRENCH, note 11, p. 292.

senses, but he said nothing about a «worm». There is an echo of Galen's scheme in the general location of the mental faculties in Costa's text, but it is not clear where the details of the functions of the ventricles—all medical rather than philosophical—come from. Nor is it clear how the philosophers came to differ from the physicians, because for Aristotle the powers of the soul were exercised in the heart and the brain served mainly to cool the heart.

Costa's text describes how the vital spirit, sent by the pulse from the rete below the brain into one of the anterior ventricles, there becomes still more subtle, is further purged, and is converted into animal spirit. As such it is fit to receive the powers of the soul. Explaining that «pulse» here means «pulsatile vein» (54), the Oxford gloss adds that the spirit is refined by means of the intellective power of the soul, but that the physicians believe that it is by means only of the *cogitative* faculty (55). Where Costa says that the refining of the spirit makes it fit to «receive» the powers of the soul, the gloss explains that the medical men hold that what is received are the faculties of intellect, cogitation and foresight, whereas the natural philosophers (*naturales*) believe that it is the sensitive faculty (56).

The gloss also makes clear that the *location* of the faculties within the ventricles by the motion of the spirit is also a medical business. At least in the case of memory this is also more or less what Costa's text says, for it describes how memory is possible only when the entrance to the rear ventricle is opened by the motion of the worm. The gloss reports the medical opinion that memory flourishes in the rear ventricle in the double sense that it stores images of things seen, and enables these to be recalled at will (57). Following his gloss, the Oxford teacher

(54) II, f. 360r: «[*pulsus*] vene pulsatiles deferentes spiritum vitalem subtilem». Also C III 17, f. 382v; V, f. 223r; H 3487, f. 203v.

(55) II, f. 360v: «[*ibi subtilior*] scilicet mediante virtute intellectiva secundum medicos secundum autem averoys mediante virtute cogitativa et distingtivam tantum». Also H 3487, f. 203v; C III 17, f. 382v; V, f. 223r.

(56) II, f. 360v: «[*recipiendum*] secundum medicos intellectivam et cogitativam et providentam secundum autem naturales sensitivam». Also V, f. 223r; H 3487, f. 203v.

(57) «[*spacio quod*] sicud quod secundum medicos posteriori cellula viget memorativa quia secundum ipsos species omnium rerum preacceptarum depinguntur in hac

advised his students that the physicians placed the power of reason in the «middle» ventricle, that is, the common space shared by all three. The physicians said this because reason was lost if this ventricle was damaged (58).

In short, Costa took much of his material from medical sources, some of it classical (which he cites) and apparently some more contemporary, which contained the doctrine of the brain ventricles. In asserting that this is a medical doctrine the Oxford *naturales* who put together or taught from the common gloss seem to want to distance the doctrine from philosophy. They are not doing so by reference to the fathers of medicine, however, but to a contemporary group of men. The phrase *secundum medicos*, used a surprising number of times, is a look at another discipline, but no more: it does not proceed to the disputed questions that were characteristic of the later Middle Ages, and which were perhaps a feature of the incorporated faculties (59).

2. *HEARING, READING AND WRITING*

The glosses also throw light on the teaching process. They are the result of the student hearing lectures (as Henry of Rainham says in London, British Library, MS Royal 12 G II) and are not, for example,

---

cellula ad quas fit recursus cum fit reminiscentia de prete[ritis]». II, f. 360v and C III 17, f. 382v.

(58) II, f. 360r: «[*spacium*] per hoc innuit cellulam mediam in [qua] secundum medicos viget racio quia illa lesa debilitatur racio». [Also H 3487, f. 203v] The argument about damage to the ventricles and their function can be traced back to Nemesius, Bishop of Emesus, a contemporary of St Augustine and who may have had a source in Poseidonius of Byzantium. Nemesius' *On the Nature of Man* was translated by Alfanus in Montecassino and was comparatively widely known. See D'ALVERNY, Marie-Thérèse. Translations and Translators. *In*: Robert L. Benson; Giles Constable (eds.), *Renaissance and Renewal in the Twelfth Century*, Cambridge, Mass., Harvard University Press, 1982.

(59) Some notable locations of the phrase *secundum medicos* are:
II, f. 358v (the motion of the heart and arteries); 358v (the medical version of the doctrine of three cardiac cavities); 360r (the location of reasoning in the brain); 360v (the location of the intellective power); 360v (the location of memory).

the result of copying an exemplar (which would put the same glosses in the same position of the folio). They are also «fair copy» written up from notes, presumably taken down in an abbreviated form on wax or «schedules» at the lecture. Each student would take slightly different notes and expand them slightly differently. Some students wrote consistently longer glosses (such as those of Durham Cathedral, MS C III 17) than others (such as those of London British Library, MS Royal 12 G II). The shorter glosses omit some material (and are not merely more concise). Further work might show that there are consistent *kinds* of material omitted, and would perhaps indicate if the omission was magisterial or by the student. There are signs of changes made during the aural and manual processes of writing lecture notes: sometimes a verb is changed to one with a closely related meaning; often the order of words is changed. Blank folios may mean that the lectures were not given or the student missed them. Occasionally a space is left, as if the student hoped to return and supply a word he had missed.

3. *INCORPORATION AND TEACHING*

This returns us to the question of incorporation. What the masters in Paris called their *consortium* was a formal grouping of teachers, recognized by the temporal powers with the privileges of a guild (60). The masters could draw up statutes, elect officers, including a proctor to represent them, and use a common seal. As a guild of teachers they decided what was taught and how; as medical teachers they decided who the great authorities were, and in short, decided what medicine was. There were, of course, powerful influences in these questions from Salerno and the southern universities, where medicine had been taught alongside the arts, but as guild knowledge medicine in Paris—and, we guess, in Oxford—was self-defining.

This has an important bearing on the relationships between medicine, arts and classroom technique. By the middle of the thirteenth

(60) On guilds see BLACK, Antony. *Guilds and Civil Society in European Political Thought from the Twelfth Century to the Present*, London, Methuen, 1984.

century, the masters of arts had decided what an arts course was to consist of. At a comparatively early date in Oxford, it was clear that the natural philosophy of the arts course was to be an examination of the Aristotelian physical works in approximately the sequence that they had had in the Lyceum and at the hands of the scholars of Alexandria and Byzantium. They may have thought the same in Paris, but they could not teach it because of the bans of 1210 and 1215. But by the 1250s, Aristotelian philosophy was the main component of the later arts course, the necessary reading for bachelors hoping to become masters. It was, then, natural philosophy that qualified a man to join the master's *consortium* and become a master himself (to become a teacher he also had to satisfy the bishop's chancellor) (61).

Now, whatever the internal merits of Aristotle's philosophy, it is clear that within the incorporated university its main function was to provide a body of knowledge on which a candidate could be examined. This was the point of the masters agreeing on what a philosophy course should be. This was an agreement not only about which books were to be the basis of the course, but about what lectures were to be given. In Oxford, indeed, there was an agreed commentary, delivered by different teachers to different students but essentially the same in all cases (62).

So not all medieval education was a question of a master adding his personal interpretation to a text supplied in some other part of the teaching process. Indeed, this happens most visibly in the later major commentaries of great masters, such as those of Aquinas in philosophy and Gentile da Foligno in medicine. These commentaries contain features of the disputation and personal resolution of problems: if Gentile cannot find a known opinion to disagree with, he has to put one in the mouth of an interlocutor, generally a student-figure (63). The earlier expositions

(61) On masters' revision guides for these examinations see LAFLEUR, Claude. *Quatre introductions à la philosophie au XIIIe siècle*, Montréal, Institut d'études médiévales, Paris, Librairie philosophique J. Vrin, 1988.

(62) The uniformity of the gloss is remarkable in the case of *De plantis*, *De differentia spiritus et anime* and the *Meteorologica*.

(63) See, for example, his commentary on the third book of the *Canon*, f. 274r: «Sed tu dices sitis que fit ab ore stomachi non fit per communitatem ...». This part of the commentary is in two volumes: (i) *Tertius can. Avic. cum amplissima Gentilis*

of teachers such as Buckfield are not personal in the same sense, being dictated by the structure of the text. The earliest «commentaries», such as those of Alfred of Shareshill, are different again, being collections of glosses that explain obscure points in the text and bring in other views, but which do not set out the logical morphology of the text by exposition or resolve disputable points (64).

But the commentaries of both Alfred and Adam provided material that came to be included in the common gloss. This was not in fact dissimilar in structure and function to Alfred's «commentary» and does not offer either a logical exposition of the text or a personal resolution of disputable problems. It was, in the terms of the time, a *disciplina* that had to be transferred from the master to the pupil. Occasionally, philosophical and medical commentaries touch in general on the mechanisms of teaching, and they do so in terms that would give little room for the personal interpretation of a text by a master. Such personal interpretations may anyway have been intended only for the eyes of other masters, not for students in routine teaching. Indeed, what was passed from master to pupil had to relate directly to what the «guilds» of artists and medical men said their professional subject was about. Philosophy was what Aristotle wrote and medicine centred on the work of Hippocrates, Galen and Avicenna: only these had authority, and what was needed was a means of understanding them, not the personal view of a modern, without authority.

4. *THE THEORY OF TEACHING*

A *disciplina* was, then, the correct understanding of ancient knowledge. General discussions about it centred on how it is transmitted, not on

fulg. expositione. Demum commentaria nuper addita videlicet Jacobi de Partibus super fen VI et XIII. Item Jo. Matthei de gradi super fen XXII quia Gentilis in eis defecit. This volume ends at fen 9 tract 1. (ii) *Secunda pars Gentilis super Avic. cum supplementis Jacobi de partibus parisiensis ac Joannis Matthei de Gradi mediolanensis ubi Gentilis vel breviter vel tacite pertransivit*, Venice, 1522.

(64) See OTTE, James K. The Life and Writings of Alfredus Anglicus. *Viator*, 1972, *3*, 275-291, and ALFRED OF SARASHEL, *Commentary on the Metheora of Aristotle*, ed. James K. Otte, Leiden, Brill, 1988.

how it varies. In the common gloss on *De differentia spiritus et anime* the transference of *disciplina* is discussed in the context of physical motion in general, and especially that of the soul. How does the soul move the body? Not with a *natural* motion, like that of a falling stone, but with a *voluntary* motion, as master to master (65). The context is Costa's discussion of how the motion of the body may be caused by the soul; for example, by fear or hate in the soul. Such a thing is a case of Aristotle's «unmoved mover», where an animal, for example, may seek what is good or avoid what is bad by reason of an unmoving disposition of the soul. It is an unmoved mover because it is a unidirectional cause: the motions of the animal do not in turn move it. Thus, says Costa, the state or condition of being a master—the *magisterium*—is what moves the master; but his motions do not change the *magisterium*. The *magisterium* in man can be equated with wisdom, continues Costa, and this is the «first perfection» of man (that is, as a rational animal). The «second perfection» of man is to apply himself in the areas of knowledge of his *magisterium*. In the case of the doctor, the first perfection is that he knows the *scientia* of medicine, and the second is the putting into practice of what he knows (66). The things known within a *magisterium* are not innate, but have to be learned; in Costa's terms they are accidental (67).

Whereas Costa uses *magisterium* in a general way as someone knowledgeable in a particular field, the common Oxford gloss more naturally uses it of the authority or expertise of the teaching master, *magister* (68). The medical doctorate itself, with its connotations of authority, was sometimes known as the *magisterium* (69). It is the master who

(65) C III 17, 385v: «non est accus naturalis omnis et ideo anima pocius movet sicut magistrum in magistro quam sicut lapis a ponderositate sua». Also II, f. 364v.

(66) «Prima namque perfectio in homine est sapiencia atque magisteria. Secunda vero perfectio in homine est studere in his que novit ex magisteriis et scientiis. Verbi gratia: Medicus dicitur perfectio prima propter scientiam medicinam; cum vero ceperit operari quod scit, dicitur perfectio secunda». See FRENCH, note 11, p. 301.

(67) «Differt ergo species naturalis a specie magisterii, quia species naturalis est substantia et species magisterii accidens est». See FRENCH, note 11, p. 301.

(68) II, f. 364v: «[*magisterium*] scilicet in magistro secundum quod magister est».

(69) See GARCÍA-BALLESTER, Luis. Medical Ethics in Transition in the Latin Mediterranean of the Thirteenth and Fourteenth Centuries: New Perspectives on

moves the discipline into the disciple (70), just as another *magisterium* put into practice might result in a skilful creation of an artificial object (71). In medicine a discussion on the topic of teaching arose from a close reading of Galen's *Tegni*, which begins with a famously obscure sentence on three modes of procedure in teaching or learning medicine. The medical men generally treated Galen's *Tegni* as a body of rational doctrine with which to interpret the *Aphorisms* of the Father of Medicine, Hippocrates, and the two texts remained fundamental in the teaching and examining of candidates for medicine. As an important part of the *Articella*, the *Tegni* was generally accompanied by a commentary by the Arab Haly Ridwan (Rodoan). One of the three methods was «doctrine», which Haly says is the action of the teacher on the pupil, the enriching of the pupil's soul. This could be done directly, in speech, less directly in writing, and indirectly in the absence of the teacher: the *prolatio* of the ancients, says Haly (72).

Clearly the teacher taught the pupil how to learn what he heard and ultimately how to read books. Probably, then, the instruction included schoolroom techniques such as the *accessus*, cardinal items to be looked for as the text was examined, and which, once learned, could be used independently of the teacher. Ultimately the purpose was to enable the student to understand directly the books of the ancients. Haly here follows Galen in saying that we should contrive to read the texts of the ancients as if the old authors were present in the same room as us, speaking directly to us. Galen meant Hippocrates and Aristotle, who had lived half a millennium or more before him, and whose language was old fashioned and often obscure. To Haly, Galen himself was an ancient, and wrote in a language that had to be wholly translated into

---

the Physician-patient Relationship and the Doctor's Fee. *In*: Andrew Wear; Johanna Geyer-Kordesch; Roger French (eds.), *Doctors and ethics: The Earlier Historical Setting of Professional Ethics*, Amsterdam, Rodopi, 1993, pp. 38-71 (p. 57).

(70) See C III 17, f. 385r: «[*causa motionis*] idest est causa motiva magister ad dandum illis discipulmam [sic]». Also H 3487, f. 206r.

(71) C III 18, f. 385v.

(72) For example, see the *Articella*, Venice, 1483, f.151r: «Doctrina est actio doctoris in discipulum», i.e. an approach, or a path.

Arabic; to the medical student in the medieval classroom even Haly, if not actually an ancient, was well stricken in years, and needed a second shift of language, from Arabic to Latin. What is central here is that medical masters and pupils felt themselves to be in a medical tradition that went back to the figure of Hippocrates. Teaching Hippocrates—hearing his voice—needed an accumulating apparatus of commentary, beginning with Galen, of translation, textual enquiry and devices such as the *accessus*. These became classroom devices with the appearance of formal schools, whether Alexandrian, Arabic or, most formally, the incorporated medieval faculty.

That is, what we might call the theory of teaching came to be important in the formal circumstances of the medieval classroom. What Hippocrates had written in a text such as the *Aphorisms* was deep medical wisdom but without an underlying argument or physical reasons. In the words of John, the Alexandrian commentator on Galen's *De sectis*, Hippocrates passed the seeds of medicine to Galen, who cultivated them and perfected medicine (73). As we have seen, John says that Hippocrates as the Father of Medicine was «glorious»; *De sectis* was the first work to be studied in the Alexandrian curriculum (74) and probably retained that position after the advent of Islam: Hippocrates comes first. It may be, then, that Costa's reference to Hippocrates' glory derives from this source. At all events, John goes on to explain that the profundity of Hippocrates' wisdom was too deep for students beginning medicine and that it was necessary to explain it by a careful reading of Galen's works. He immediately proceeds to an *accessus* to *De sectis*, indicating the Intention of the Author, the Attribution and Utility of the Text, its Title, the Order of Reading and Method of Teaching, the Number of Parts, and the Part of Medicine to which it belonged. *De sectis* was known early in the medieval West, and no doubt such techniques, so clearly designed for a formal classroom, were known when medicine became incorporated in the thirteenth century.

---

(73) See PRITCHET, Christopher D. (ed.). *Ioannis Alexandrini commentaria in librum de sectis Galeni*, Leiden, Brill, 1982.

(74) See ISKANDAR, Albert Z. An Attempted Reconstruction of the Late Alexandrian Medical Curriculum. *Medical History*, 1976, *20*, 235-258.

The problem was that Galen, attempting to explain Hippocrates' writings in dialectical and physical terms, and in addition writing a huge diversity of medical material himself, was an unwieldy author. He did not write with formal instruction in mind, but his authority was such that he somehow had to be accommodated in the new classrooms. This posed problems in teaching medicine effectively in a fixed time to students who were taking an expensive course. Much of the work of the scholars who worked on the «New Galen» at the end of the thirteenth and the beginning of the fourteenth centuries was concerned with bringing order and abbreviation to Galen's works (75).

Abstract discussion about the nature of teaching in the classroom (at least in medicine) was made more complex in the thirteenth century by Averroes' doctrine of the unicity of intellect. Averroes was known as a great commentator on Aristotle (although he was occasionally confused with Avicenna by Oxford students) (76) and the translation and dissemination of his medical textbook, the *Colliget*, from the 1280s gave him added authority. The point was that if mankind shared a single eternal intellect there could be no proper, Aristotelian, causality in the acquisition of knowledge by the individual. Gentile da Foligno, the great medical commentator of early fourteenth-century Perugia, disagreed. Knowledge did not spread like fire breeding fire, and teaching was a matter of imparting «doctrine», the knowledge of the teaching doctor (*scientia doctoris docentis*) (77). This was different both from the *scientia* in the head of the student and from the manner of teaching. Gentile was later, was in the South, and was a heroic interpreter of a great medical text (the *Canon* of Avicenna) and so cannot belong to the story

(75) See GARCÍA-BALLESTER, Luis. The «New Galen»: a Challenge to Latin Galenism in Thirteenth-Century Montpellier. *In*: Klaus-Dietrich Fischer; Diethard Nickel; Paul Potter (eds.), *Text and Tradition. Studies in Ancient Medicine and its Transmission Presented to Jutta Kollesch*, Leiden, Brill, 1998, pp. 55-83.

(76) UL 206, f. 210r and V, f. 133r have Averroes where II, f. 226v has Avicenna (the *Meteorology*).

(77) *Plusquam commentum in parvam Galeni artem ... Hali, qui eundem Galeni artem primus exposuit. Ioannitii as eundem introductio. Gentilis, qui primum eiusdem artis librum dubitando declaravit. Nicolai Leoniceni quaestio de tribus doctrinis*, Venice, Junta, 1557, f. 222r.

of the *corpus vetustius* and the English gloss; but we should note that when teaching had become much more a question of the disputed question, then the theory of teaching was concerned with definition and demonstration, both *quia* and *propter quid*.

5. *CONCLUSION*

At the end of *De longitudine et brevitate vitae* Aristotle, nearing the end of what we call the *Parva naturalia*, says that he has only to deal with the topics of youth and age, and life and death, to «complete our course of study of animals» (78). This was almost the end, too, of the medieval natural philosophy course. Aristotle also promises here a separate treatment on plants, and the thirteenth-century masters included in their lectures the *De plantis* (which was recognized as not being Aristotle's in the next century). At the very end of the promised topics on youth, age, life and death (79), he rounds off the whole exercise by returning to the topic he had touched on in *De sensu et sensato*, the relationship between medicine and philosophy:

> «Our discussion of life and death and kindred topics is now practically complete. But health and disease also claim the attention of the scientist, and not merely of the physician, in as far as an account of their causes is concerned. The extent to which these two differ and investigate diverse provinces must not escape us, since facts show that their enquiries are, to a certain extent, conterminous. For physicians of culture and refinement make some mention of natural science, and claim to derive their principles from it, while the most accomplished investigators into nature generally push their studies so far as to conclude with an account of medical principles».

(78) 467b.

(79) The text quoted here occurs only in *corpus recentius* texts. These did not have a standard gloss and are rarely annotated, so we cannot tell what the students were taught. (The text on death mentioned here should not be confused with the *De morte et vita* of the *corpus vetustius*). Aristotle actually ends on the topic of respiration, regarded as late chapters of *De iuventute et senectute*.

The medieval student, having finished his course in natural philosophy, was left in no doubt about the standing of medicine. It may have been subalternated to philosophy, but it went further, beginning where the philosopher finished. Maybe he saw around him «physicians of culture and refinement» who wanted to take medicine further as a higher discipline in its own faculty. In this quotation from Aristotle they had a powerful justification in a world where all educated men were Aristotelians. By «diverse provinces» and «conterminous» Aristotle seems to suggest that the philosopher and physician shared a boundary and had their being on either side of it: it is suggested above that the medieval practice of incorporation provided institutional form for this distinction, finally realised when the physicians were able to set up their own faculty in the universities. It is clear from the early years of the fourteenth century that the doctors had succeeded in transforming themselves from mercenary treaters of disease to high scholastic philosophical warriors. This chapter suggests what the philosophy student might come to know of medicine at a time when the doctors were attempting to reach the highest form of institutionalization; what might prepare him to proceed institutionally to medicine or (especially in England) for practising it on the basis of his own reading (as a gentleman of culture and refinement); and what strategies could be found in the Aristotelian corpus for professionally ambitious doctors.