

Unit 4 – Philosophy and Medicine

Reading

The origins of medical science are of interest not only to physicians, historians of medicine or simply historians but also to classicists, philosophers, deontologists and ethicists and even to archaeologists. Medical science did not have in antiquity the form that it has nowadays. As has been noted, medicine, a science which is closely related with man and human nature, appeared in a rather developed stage of human civilization. However, it can be traced back to classical times, in the form of therapeutic practices, while, on the other hand, the physician was not the scientist as we know him today who possesses a body of knowledge which he applies in various cases; instead, he is the healer who applies certain accepted practices for the cure of a disease and the treatment of a wound. For the people of the classical times these medical practices had a divine and a god-inspired character.

Before we speak about physicians-healers, we have more precisely to refer to soothsayers or augurs who could, from the signs of the weather, the flying of birds or the entrails of animals that were sacrificed to gods, conclude which practice –not just therapeutic practice- had to be applied and followed for the cure of the disease or the catharsis of the plague that had befallen the town. Consequently, it was rather the soothsayers' and the augurs' job, than the physicians-healers', to make sure that they have found the ways so that the impious action could be purified and the miasma could go away.

However, as the years went by, this conception of disease as originating in religion started to subside. The ancient Greeks realized gradually that to attribute the cause of a disease or a plague to gods did not actually provide them with an explanation. Thinking in this way led them to the peculiar conclusion that all regular phenomena were natural, and all irregular phenomena were divine. However, such a conclusion could not be accepted. Consequently, they soon reached the conclusion that, on the one hand, all phenomena were natural and divine, and on the other that there will always be certain elements of a phenomenon which we cannot explain. This is why religion gradually gives way and is replaced by philosophy.

1. The Relation of Ancient Greek Philosophy and Medicine.

One of the most important problems of antiquity has been the relation between philosophy and medicine. As might be expected, on this topic there is no agreement between the classicists, the philosophers and the historians of ancient medicine. Even though everybody recognizes that philosophy and medicine are related in antiquity in a rather complicated way, however, according to some modern philologists and historians, it was ancient medicine rather that influenced the philosophical thought than the other way round. However, according to the prevailing view, it was the philosophers that put the foundations of medical theory.

In particular, the first Milesian philosophers, Thales, Anaximander and Anaximenes engaged more with physics and astronomy than with anthropology and medicine. However, with the Pythagoreans who settled



in Croton of Italy, where there was a medical tradition, things change. Alcmaeon of Croton, who was a Pythagorean or was related with Pythagoras' students, was a philosopher-physician. Aristotle mentions him as a philosopher, Diogenes Laertius on the other hand mentions that Alcmaeon wrote mainly about topics of medicine. Such a thing, of course, does not mean that he was a physician but that he was trying to define the theoretical principles of medicine and then to apply them to experience. He starts with the thesis that the body is consisted of a number of opposite pairs, the liquid and the dry, the hot and the cold, the bitter and the sweet etc. Health prevails when we have a harmonious mixing of these elements (κρᾶσιν), that is to say when each of these elements plays the role that is its share, when in other words, there is isonomy (ἰσονομία). We have disease, on the other hand, when one of these elements prevails (monarchy, μοναρχία) and in this way it destroys its opposite, since it prevents it from completing its role.

Empedocles of Akragas continues more than anybody else this tradition of ancient medicine. Nowadays he is more known as a philosopher; however, ancient sources witness his medical engagement and activity. According to Galen, together with Philistion of Locri and Pausanias, Empedocles was one of the leaders of the medical school of Italy, who disagreed with the Asclepiads of Cos and Knidos. He has written the philosophical treatise *On Nature*. In addition, he wrote a treatise related to medicine, which has not reached us.

Empedocles was interested in the beginning of beings, human beings included. In this way, he put forward a theory about the way they were created, how they consist in four elements mixed in different analogies, something that allows him to explain the difference among human beings. In this way he is led to the thesis of individual natures – something that in the Hippocratic School acquires a certain importance, since it enables us to justify the individualized therapy. At the same time, however, he is led to the formulation of a theory of physiology of the most important vital functions, i.e. of reproduction, of growth and nutrition, of breathing, of sleep and death, of thinking and understanding. Independently of whether or not Empedocles' theory of physiology was satisfactory, the importance of this undertaking consists in that he pointed out that a theory of physiology of human beings was indispensable.

Apart from Alcmaeon of Croton and Empedocles of Akragas, there were also other philosophers who developed more complex theories of physiology. Among them we can mention Anaxagoras, Diogenes of Apollonia, Democritus and also Hippon of Samos and Philolaos of Croton. In an analogous manner Plato and Aristotle in the 5th and 4th century BC contribute with their writings to the development of medicine. In his long treatise *Timaeus*, in which Plato describes his own creation of the world, he presents among other things the creation of man. In this very same part he makes a first attempt in the history of medicine to classify the diseases. He so distinguishes between the diseases of the body and the diseases of the soul. The diseases of the body are distinguished into three kinds (*Timaeus* 81E-86A): (a) Diseases, which have to do with the excess or defect (in one word, the imbalance) or misplacement of the primary bodies. (b) Then we have the diseases of the secondary tissues. And (c) we have the diseases, which have to do with the breath, the phlegm, the bile and the fevers. The diseases of the soul, on the other hand, are usually related with the malformation of bodily constitution and the bad nurture (*Timaeus* 86B-87B). Moreover, the disproportion between the soul and the body may be another cause of a soul disease (*Timaeus* 87B-89D), whereas he also includes another section, which he devotes to the care of the soul (*Timaeus* 89D-90D).



Interestingly enough, the Great Philosopher has not written any treatise on medicine or, to put it more precisely, no treatise on medicine composed by Aristotle has been extant so far. However, what is worth noticing especially for Aristotle's scholars is that even though Aristotle has not written any medical treatise, however in his ethical treatises like, for instance, the Nicomachean Ethics, he employs examples taken from medicine and he quite often makes comparisons between medicine and ethics. This is because medical knowledge, like ethical knowledge, is contingent (ἐνδεχόμενη), i.e. it could have been otherwise, unlike mathematical and metaphysical knowledge, which is necessary (ἀναγκαῖα). The basic difference between the two kinds of knowledge is that in the case of metaphysical and mathematical science the principles of knowledge are in the things to be known, whereas in the case of medicine, ethics and the productive arts the principles of knowledge are in the knower. This is the reason why Aristotle calls the former theoretical or necessary sciences and the latter practical and productive or contingent sciences. The physician has to judge and calculate the amount of medicament he has to prescribe to a patient for a disease, whereas in the case of another patient for the same disease he may have prescribed a different medicament. This kind of knowledge, which according to Aristotle is partly theoretical and partly practical, is called by the Philosopher calculative science and is acquired by the calculative faculty of the rational soul, exactly because it may vary each time depending on a number of factors.

In an analogous manner, ethical knowledge is governed by practical reason, and to the extent that it is governed, it is a theoretical science. However, as just said, the principles of medical knowledge are in the knower, the physician has to modify his instructions and prescriptions in accordance with the particular organism of the patient he has in front of him each time. To this extent, ethics is a calculative and practical science. Ethical knowledge operates in the same way as medicine. It is governed by practical reason. However, each time the agent passes a judgement or decides to act –like the physician- has to take into account not only the particular external circumstances in which the action is to be committed, but also the performer's particular psychological constitution, his dispositions, intentions, motives etc. at the moment of the performance of the action. To this extent, ethical science is like medical science, that is theoretical and practical /calculative at the same time.

This combination of philosophy with medicine becomes clear in the works of Corpus Hippocraticum. However, in the very same works we notice the separation of the two. In this way we realize that while in some treatises the writer attempts to explain the medical phenomena arguing from certain hypotheses or axioms to the conclusion, as philosophers do, in some others he disagrees with such a method. More precisely, in his treatise On Ancient Medicine the writer first formulates the thesis of his opponents and then he advances against it his own method. He first criticizes the method of the modernists who reduces medicine to one only principle (On Ancient Medicine, vol. I, I, §§1-11).

All who, on attempting to speak or to write on medicine, have assumed for themselves a postulate as a basis for their discussion – heat, cold, moisture, dryness, or anything else that they may fancy – who narrow down the causal principles of diseases and of death among men, and make it the same in all cases, postulating one thing or two, all these obviously blunder in many points even of their statements, but they are most open to censure



because they blunder in what is an art, and one, which all men use on the most important occasions, and give the greatest honours to the good craftsmen and practitioners in it (On Ancient Medicine, vol. I, I, §§1-11).

In the writer's opinion, such ways or reasoning are simplistic and for this reason imprecise. He is against the monistic thesis in medicine and consequently he extends his criticism in such a way as to include each and every form of philosophical medicine. According to the modernist physicians' thesis, medicine does not possess its own method, it is not an autonomous science, because for the knowledge of man and for the knowledge of his constitution and existence medicine presupposes cosmology (On Ancient Medicine, vol. I, XX, §§1-8).

Certain physicians and philosophers assert that nobody can know medicine who is ignorant what a man is; he who would treat patients properly must, they say, learn this. But the question they raise is one for philosophy; it is the province of those who, like Empedocles, have written on natural science, what man is from the beginning, how he came into being at the first, and from what elements he was originally constructed (On Ancient Medicine, vol. I, XX, §§1-8).

The writer objects to this thesis by putting forward his own view. The physician does not need to take recourse to philosophical views in order to conceive and create man on the basis of certain first elements. On the contrary, he should study how the (human) body responds to various kinds of food, drinks or exercises (diet, δίαίτα), and so define the various categories of human nature. If philosophy engages with the definition of the principles of human nature, the object of medicine refers to the different types of human nature, that is to natures in plural, which are the result of the rational observance and study of the relation between the way of living (diet, δίαίτα) and the body (On Ancient Medicine, vol. I, XX, §§9-27). He writes among other things:

But my view is, first, that all that philosophers or physicians have said or written on natural science no more pertains to medicine than to painting. I also hold that clear knowledge about natural science can be acquired from medicine and from no other source, and that one can attain this knowledge when medicine itself has been properly comprehended, but till then it is quite impossible (On Ancient Medicine, vol. I, XX, §§9-10)

In this way, medicine is separated completely from philosophy, and becomes an autonomous science, the science that primarily concerns man.

In his treatise, On the Nature of Man, Hippocrates criticizes all those physicians who argue that man is either air or fire or water or any other element. He further claims that man is nothing that is not obvious. However, this is what certain physicians-philosophers argue about man (On the Nature of Man, vol. IV, I, §§



1-8). As the Roman philosopher-physician Celsus holds, even though medicine was initially considered part of philosophy, however we owe to Hippocrates, a man equally important for his philological and medical talent, that he detached medicine from philosophy (De Medicina, Prooemium, §§ 6-8).

Consequently, medicine was gradually cut off from philosophy and became autonomous. But this does not mean that the relations or influences from the one to the other stopped existing between them. Physicians, as we have seen, refused any attempt to support the therapeutic science on cosmology; however, they relied quite a lot on the elements of the natural theory put forward by philosophers in order to formulate a theory of anthropology. Moreover, different philosophical theories played an important role in the development of medicine. Given that in antiquity physicians were distinguished into those that were traditional therapists and those that were educated and well-experienced doctors, the Rationalists mainly provided them with the possibility to justify the prognosis of a disease and, by and large, the kind of cure they applied.

Of course, the existence of a (philosophical) theory which would justify the particular medical practice was not considered indispensable to all medical schools in antiquity. The Empiricists, who had been influenced quite a lot by Skepticism, contended that medical theories are usually formulated afterwards on the basis of the experience that had been accumulated until then, and it was the experience on which the good physician had to rely. In a similar manner, the Methodists held that the physician had to know medical theory, not only because the theory provided the doctor with a reason or justification for the therapeutic practice he was applying, but because otherwise his patients would think that that he was incompetent and in this way he would be undervalued and considered a simple practical therapist. As a consequence, the physician had to know, not only philosophy and medical theory, but also geometry, mathematics and astronomy, and also other sciences.

2. Ancient Greek and Roman Medical Deontology

Things change in the 4th century BC. As we realized, during the 6th and 5th centuries there was a relation between philosophy and medicine. Until the 5th century the physicians looked to philosophy in order to formulate their method, and asked philosophy's support in so far as issues of knowledge, logic and philosophy of nature were concerned. However, by the end of the 5th century and the beginning of the 4th things gradually change. Philosophy by then changes gradually its character. Even though at the beginning philosophy's concern and object of research was the beginning of cosmos and the principles that prevail it, by entering the 4th century BC, philosophy is now concerned with human nature, i.e. man. Philosophers' interests now do not focus so much on nature and the first principles of cosmos, but instead concentrate on man and the human things. This is why during this period we have the development of this branch of philosophy that came to be known as ethics (ἠθική) (or moral philosophy) and in modern times, philosophical anthropology. This does not imply that the relation and the influence between philosophy and medicine is interrupted. But, instead, it means that the kind of relation which is developed between the two is of a different kind. The physicians did not seek the advice and support of the cosmologists and the natural philosophers, but instead they relied quite a lot on ethicists and anthropologists, that is on moral philosophers who could give them information if not about man's body but man's interior. Moral philosophers, on the other hand, realized that they have to offer their support to physicians who were practicing the medicine, i.e. the science of man.



Indications of the particular way in which philosophy influences during the Hellenistic and Roman period medicine constitute the deontological treatises of the Corpus Hippocraticum, The Oath (Ὁρκος), The Physician (Περὶ Ἱητροῦ), Law (Νόμος), Decorum (Περὶ εὐσχημοσύνης), Precepts (Παραγγελίαι) and On Ancient Medicine (Περὶ Ἀρχαίης Ἱητρικῆς). Also the philosopher-physician's Galen treatise, That the excellent physician is a philosopher (Ὅτι ὁ ἄριστος ἱητρὸς καὶ φιλόσοφος), treatises and works by other classical and Roman scholars such as the Roman Celsus, Sextus Empiricus and others. If we study these treatises carefully, we realize that their writers do not engage in the formulation of a theory of physiology of the functions of human organism, nor in the study of a particular disease. What they are interested in particularly is the character and the role of the physician, in other words, the contribution of the physician in the diagnosis and the therapy of the disease. As will become apparent in what follows, according to the writers of these treatises, the physician of those times is not a simple “technocrat”, as we would say nowadays, who applied mechanically the practices for the cure of the patients. The physician is that man who is at the same time virtuous and wise, and is inspired by a particular interest and respect for his patient.

In particular, in the treatise Law, the writer refers and explains how one can become possessor of the medical technê. The youth that desires to acquire medical knowledge and become a physician first of all ought to have the natural inclination, he should receive the appropriate teaching and practical training, he should find himself in the right environment, which means that his education should start from an early age, he must be industrious and must devote a lot of time. According to the writer of the treatise, the natural inclination plays an important role in his upbringing and education that will follow. Because where man's nature resists, upbringing and education cannot perform their work. Where on the other hand, there is natural tendency, the task of education becomes easier and more efficient. Of course, nature on its own does not suffice, if someone desires to become a physician. The notion of time is basic in this case from two points of view: (a) bringing up and education should start from an early age, and (b) he should devote to the study and the practical training of medical technê a lot of time – it is in this sense that he should find himself in the appropriate environment.

At this point we should underline that the man who is going to become a physician he must not simply receive the medical teaching and training. (Law, II, §§15-18).

According to Galen, his education must be wider and more basic, and must include some knowledge of the liberal arts (artes liberales), as they were called, that is arithmetic, geometry, astronomy and most probably music (quadrivium) and also grammar, dialectics and rhetoric (trivium). And even though it is not difficult for someone to realize that arithmetic, geometry and astronomy may have some application to medicine, it is however difficult for him to understand what kind of relation may exist between the liberal arts and medicine. However, the role and the use of the rhetorical technê in the case of medicine has been recognized from Plato's era. Gorgias in the homonymous dialogue of Plato points out to Socrates that, when a physician could not convince a patient to take his medicament or to follow the regimen prescribed, then he attempted to convince him by virtue of the rhetoric. Because as he claimed, the physician could have had better medical knowledge about health, however, he might have been less convincing than an orator in front of the patient. According to Galen, therefore, the man who was going to become a physician must have not only medical knowledge but also knowledge of the rhetorical technê and of the other liberal arts. He criticizes the Methodists who promise that they provide the appropriate medical education and



training in a short period because in this way they open the medical profession to the wide public. But there was also another reason for this.

According to Galen and, before him, according to Hippocrates, it was not sufficient for someone who was going to become a physician to acquire simply medical knowledge and to have the necessary medical training. The extreme specialization as this has developed in the modern and contemporary era, which requires that one becomes an expert in a field, even though he has not familiarized himself with other relative or similar fields, was unknown in antiquity. Even more in antiquity was unknown the separation between the social role that someone had to perform in society and his personality. For the ancient Greek the social role and the psychological type coincide, they are united in what we call character. The character, in other words, legitimizes morally a way of social existence.

This basic difference which exists between the modern and the ancient era explains most probably why it did not suffice for the apprentice to receive simply medical education and training. He would not be taught only, he would not learn simply the medical practices which he would have to apply to his patients that asked him for help. He had also to learn and to be trained as to how to approach his patient with the due respect, to study carefully and to appreciate the difficult situation he was in and, mainly, to prove that he was worthy of the trust that the patient had showed him, because he had precisely placed into his hands what was the most sacred thing he has, his life. As Hippocrates writes:

The intimacy also between physician and patient is close. Patients in fact put themselves into the hands of their physician, and at every moment he meets women, maidens and possessions very precious indeed. So towards all these self-control must be used (The Physician, vol. II, §§24-28).

In all these meetings and associations that the physician has with his patients and their relatives he had to behave with moderation. And this is how he has to be disposed towards them in so far as both, the soul and the body are concerned.

The apprentice physician, consequently, did not have to be taught only the medical art, but also he had to exercise his personality in such a way as to treat the patient with a virtuous disposition. It is not enough to behave in a moderate manner towards his patient and his family members. As the writer of the Oath declares, the physician swears that he will leave any injustice and damage aside (the contemporary principle of not harming) and that he will enter the ill persons' home only for their good (the contemporary principle of beneficence).

If the main thing is the patient's good, then the physician should not discuss and ask his reward from the very first moment. Such a thing may create the impression to the patient that, if the two of them do not contract the right agreement, then the physician will go away. On the contrary, the physician ought to be compassionate and to take into account the patient's property and wealth. And if there is need sometimes, he has to offer his services for free, recalling to his mind certain past benefactions he received and his good



name. Moreover, he should never hesitate to provide his help to a foreigner or needy. And Hippocrates justifies this by saying:

For where there is love of man, there is also love for the art (Precepts, vol. I, VI, §§6-7).

Quite often the physician's love and compassion have helped the patients a lot, even when their disease had reached a dangerous stage, to show important improvement recovery in their health.

Consequently, the physician's medical knowledge and expertise on its own does not help the patient's cure, if there is not at the same time the virtuous and compassionate character of man. It is a happy coincidence if a physician is both, good in his art and a virtuous character. However, in cases in which these two do not coincide, it is better for the physician to be a good man and not a particularly good doctor than a good professional with a bad character and behaviour. Because the virtuous character compensates for the defective (medical) art, while the bad character on the other hand corrupts and destroys even the most perfect technê. It has become clear by now why, according to Galen, the man that was going to become a physician had to study also the liberal arts, something analogous to humanities, as we would call them nowadays. According to the ancient Greeks, medical education and training provided the apprentice with the required knowledge and experience for the cure of the patients. As, in an analogous manner, the teaching of an art, e.g. of building ships or waging a war, provided the young pupil with the knowledge necessary in order to practice the particular technê well, that is to build ships and win the wars respectively. The liberal arts, on the other hand, did not provide the pupil with some particular knowledge. Or to put it differently, the liberal arts did not teach the young pupil some technê. On the contrary, they addressed the character of the pupil and contributed to the development and the refinement of his feelings, abilities and virtues. In this way the liberal arts cultivated and awoke his self-consciousness and virtuous choice, they motivated him to perform just, prudent and brave actions and rendered him a just, prudent and brave character, in one word, wise. But as he became a wise man, he was at the same time becoming a better physician. It is in this sense that Hippocrates writes:

For a physician who is a lover of wisdom is the equal of a god. Between wisdom and medicine there is no gulf fixed; in fact medicine possesses all the qualities that make for wisdom. It has disinterestedness, shamefastness, modesty, reserve, sound opinion, judgement, quiet, pugnacity, purity, sententious speech, knowledge of the things good and necessary for life, selling of that which cleanses, freedom from superstition, pre-excellence divine. What they have, they have in opposition to intemperance, vulgarity, greed, concupiscence, robbery, shamelessness. (Decorum, vol. II, V, §§ 1-13).

The difference which exists between wisdom and medicine is small and all the properties which exist in wisdom also exist in medicine, i.e. judgement, moderation, knowledge of the useful and necessary things for life, freedom from superstition etc. The future physician, therefore, who along with his medical



knowledge received the liberal education became wise, that wise physician who together with the promotion of the good of his (medical) art, the cure of the patients, promoted the absolute good, which was nothing else but the exercise of virtue and the eudaimonous life. According to the ancient Greeks and more specifically according to Hippocrates and Galen, the practice of medical art, the exercise of any art whatsoever could not be separated from the exercise of virtues that had to be developed at the same time. Whatever was the art that any citizen exercised, he could not have been practicing it well, if together with the “telos” of the particular art, he did not promote at the same time his own “telos”, the good that was common to all men, the virtuous life.

References

Texts

- Aristotle, works transl. in English, The Loeb Classical Library, Cambridge, Massachusetts, London 1989.
- Celsus, *De medicina*, transl. in English W.G. Spencer, The Loeb Classical Library, Cambridge, Massachusetts, London 1971.
- Diels, H. – Kranz, W. (eds.), *Die Fragmente der Vorsokratiker*, 4 vols., Weidmann 1989.
- Diogenes Laertius, *Lives of eminent philosophers*, transl in English R.D. Hicks, The Loeb Classical Library, Cambridge, Massachusetts, London 1925.
- Galen, *Scripta Minora*, Lipsiae 1891.
- Galen, *De Methodo Medendi*, transl., introd. Comment. R.J. Hankinson, Clarendon Press, Oxford 1991.
- Hippocrates, vol 1-6, transl. in English by W.H.S. Jones, The Loeb Classical Library, Cambridge, Massachusetts, London 1984.
- Plato, *Lysis, Symposium, Gorgias*, transl. in English W.R.M. Lamb, The Loeb Classical Library, Cambridge, Massachusetts, London 1925.
- Plato, *Timaeus, Critias, Cleitophon, Menexenus, Epistles*, transl. in English R.G. Bury, The Loeb Classical Library, Harvard University Press, Cambridge, Massachusetts 1929.

Books

- Amundsen, D.W., *Medicine, society and faith in ancient and medieval worlds*, Johns Hopkins University Press, Baltimore 1996.
- Attia A, Buisson G. (eds.), *Advances in Mesopotamian medicine from Hammurabi to Hippocrates*, Brill, Leiden-Boston 2009.
- Barnes J., Jouanna J. (eds.), *Galen et la philosophie*, Fondation Hardt, Vandoeuvres 2003.
- Cantor, D. (ed.), *Reinventing Hippocrates*. Ashgate, Aldershot 2002.
- Cornford, Francis M. (ed.), *The Timaeus of Plato translated with a running commentary*, Routledge and Kegan Paul, London 1937.
- Craik, E.M., *Hippocrates, Places in man*. Oxford 1998.
- Dickie, M., *Magic and magicians in Greco-Roman world*. London 2001.
- Drachmann, A.G., *The mechanical technology of Greek and Roman antiquity*, Copenhagen 1963.
- Edelstein E.J., Edelstein L., *Asclepius: Collection and interpretation of the testimonies*, John Hopkins University Press, Baltimore 1998.
- Edelstein, Ludwig, *Ancient Medicine*, John Hopkins University Press, Baltimore and London 1967.
- Frede, Michael, *Essays in Ancient Philosophy*, Clarendon Press, Oxford 1987.
- Geller, M.J., Finkel I.L. (eds), *Aspects of disease in ancient Mesopotamia*, Brill, 2002.
- Hankinson, R.J. (1991), *Galen on therapeutic method*, Clarendon Press, Oxford 1991.



- Hankinson, R.J. (ed.), *Galen on antecedent causes*, Cambridge University Press, Cambridge 1998.
- Harris, W.V. (ed.), *Mental disorders in ancient world*, Brill, Leiden 2013.
- Jackson, R., *Doctors and diseases in the Roman Empire*, British Museum Publications, London 1988.
- Johnston, I., *Galen on Diseases and symptoms*, Cambridge University Press, Cambridge 2006.
- Jouanna, J., *Hippocrate et l'Ecole de Cnide*, Les Belles Lettres, Paris 1974.
- Jouanna, J., *Greek medicine from Hippocrates to Galen. Selected papers*, Brill, Leiden-Boston 2012.
- Jouanna, J., *Hippocrates*, Johns Hopkins University Press 2001.
- King, H., *Greek and Roman medicine*, Bristol Classical Press, Bristol 2001.
- Kingsley, P., *Ancient philosophy, mystery and magic: Empedocles and Pythagorean tradition*, Clarendon Press, Oxford 1995.
- Kudlien, F., Durling, R.J. (eds), *Galen's method of healing*, Brill, Leiden 1991.
- Kuhn, K.G. (ed), *Claudii Galeni Opera Omnia*, C. Cnobloch, Leipzig 1821.
- Laskaris, J., *The art is long: on the sacred disease and the scientific tradition*, Brill, Leiden 2002.
- Long A, Sedley, D.N., *The Hellenistic philosophers*, Cambridge University Press, Cambridge 1987.
- Longrigg JN (1993), *Greek rational medicine: philosophy and medicine from Alcmaeon to the Alexandrians*. London: Routledge.
- Longrigg, J.N., *Greek medicine from the heroic to the Hellenistic age: a source book*, Duckworth, London 1998.
- MacIntyre, Alasdair, *After Virtue, a study in moral theory*, Duckworth, London 1981.
- Nutton, V. (ed.), *Galen: Problems and prospects*, The Wellcome Institute, London 1981.
- Nutton, V. (ed.), *The unknown Galen: Bulletin of the Institute of Classical Studies, Suppl. 77*, Institute of Classical Studies, London 2002.
- Rocca, J., *Galen on the brain*, Brill, Leiden 2003.
- Sigerist, H.E., *A history of medicine*, Oxford University Press, London 1951.
- Smith, W.D., *The Hippocratic tradition*, Cornell University Press, Ithaca 1979.
- Temkin, O., *The falling sickness*, John Hopkins University Press, Baltimore 1971.
- Temkin, O., *On second thought and other essays in the history of medicine and science*, Johns Hopkins University Press, Baltimore 2002.
- Van der Eijk, P.J., *Ancient histories of medicine*, Brill, Leiden 1999.
- Van der Eijk, P.J., *Diocles of Carystus: a collection of the fragments with translation and commentary*, Brill, Leiden 2000.
- Van der Eijk, P.J., *Hippocrates in context: Papers read at the 11th International Hippocrates Colloquium*, Brill, Leiden 2005.
- Van der Eijk, P.J., *medicine and philosophy in classical antiquity: doctors philosophers on nature, soul, health and disease*, Cambridge University Press, Cambridge 2005.
- Van der Eijk, P.J., Horstmannshoff, H.F.J., Schrijvers, P.H. (eds.), *Ancient medicine in its socio-cultural context*, Rodopi, Amsterdam 1995.
- Von Staden, H., *Herophilus: The art of medicine in early Alexandria*, Cambridge University Press, Cambridge 1989.

Articles

- Aston E. Asclepius and the legacy of Thessaly. *Classical Quarterly* 2004; 54:18-32.
- Kalokairinou, Eleni, "Ancient Medicine and Philosophy: a Philosopher's Perspective", Demetrios Michaelides, *Medicine and Healing in the Ancient Mediterranean World*, Oxford and Philadelphia, Oxbow Books 2014.
- Kalokairinou, Eleni, "Tracing the roots of European Bioethics back to the Ancient Greek Philosophers-Physicians" in Amir Muzur and Hans-Martin Saa (eds.), *Fritz Jahr and the Foundations of Global Bioethics. The Future of Intergrative Bioethics*, Münster, Lit 2012.



Project number: 2018-1-ES01-KA203-050606

- Kalokairinou, Eleni, “Tracing the Origins of Bioethics to Hippocrates’ work”, *Skepsis*, vol. XVII/i-ii (2006) pp. 88-96.
- Kalokairinou, Eleni, «Ουμανισμός και ρομαντισμός στις ιατρικές επιστήμες», *Επιστημονικό μνημόσυνο εις μνήμην Νέλλης Τσουγιοπούλου*, Πανεπιστήμιο Κύπρου, Λευκωσία 2006, σελ. 39-54: (“Humanism and romanticism in medical sciences”, *Scientific commemorative symposium for Professor Nelly Tσουγορουλου*, University of Cyprus, Nicosia 2006, pp. 39-54).
- Saunders, K.B., The wounds in Iliad 13016, *Classical Quarterly*, vol. 49, (1999) pp. 345-363.

