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INTRODUCTION

CAUSING HEALTH AND DISEASE: MEDICAL POWERS IN CLASSICAL AND LATE ANTIQUITY[1]

This special issue of the *British Journal for the History of Philosophy* is devoted to the investigation of how thinkers of classical and late antiquity conceptualized the relation of cause and effect in the special domain of medicine – hence in connection with health and illness, diseases and cures. The modern reader might be surprised to learn that medical practice was tightly interwoven with philosophical speculation in antiquity. Yet there is a wealth of philosophical thinking to be recovered from ancient medical texts which by and large have so far been left 'on the margins' of mainstream research in the history of philosophy. The essays included in this special issue showcase cutting-edge research on some of the most prominent issues that the ancient thinkers-cum-doctors were investigating during the period from the Pre-Socratics to Neoplatonism. Inevitably this can only be a 'gappy' selection of topics across a broad temporal spectrum. The goal of this special issue is not to be comprehensive, but rather to engage the reader in exploring further this fascinating avenue of research in the history of philosophy.

What is health? Is it best conceived as a stable or a constantly changing equilibrium? An equilibrium of what? How is health achieved? How is health preserved? What affects it? What is the relation between physical and mental health? Which external factors (such as climate or food) or habits (such as taking a stroll after a meal) make a causal difference to the state of the diseased patient, and how? Are such causal factors also constitutive of health? How is the doctor to go about discovering the causes of illness? How is illness manifested? What is there to learn about its status from the ways it is manifested? How do animals cause their offspring to come to be? What 'goes wrong' if anything in the causal chain leads to the procreation of deformities rather than well-formed individuals? These are some of the questions to which the doctors-cum-philosophers in antiquity were pioneering answers. Central to their thinking is the concept of causality.

The ancient authors under consideration here implicitly assume that causation is the 'operation' of causal powers (*dunameis*). Such causal powers are the so-called opposites of the Ionian tradition: the dry and the wet, the hot and the cold, etc. They operate according to the causal principle that

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'like causes like'. That is to say, causation is taken to be the 'transmission' from *x* to *y* of something, F, which *x* has to have already, in order to be able to transmit it to *y*. By passing F on to *y*, *x* makes *y* be what *y* is not yet and *x* is already, namely F. That is, *x* causes *y* to be like *x* itself (with respect to F). The 'like causes like' principle grounds in the medical context another principle that the Hippocratics in particular made explicit: 'opposites cure opposites'. If fever for instance is an excess of heat in the body, it will not be cured by a 'sympathetic' opposite such as the hot (contrary to the magicians' beliefs); on the contrary, heat will make the feverish patient even hotter. By contrast the cold will make the patient colder. We shall see in what follows how central the notion of causal powers/opposites is in the medical discussions of the time.

The journal issue opens with an essay by Stavros Kouloumentas on the Pre-Socratic thinker Alcmaeon of Croton. The exact dates and the relationship of Alcmaeon to other early Greek philosophers and cosmologists of the time have proven very hard to establish. (He is likely to have written his work sometime between 500 and 450 BCE.) On the other hand, the surviving fragments and testimonia, which focus primarily on issues of physiology, psychology and epistemology, clearly reveal Alcmaeon to be a thinker of considerable originality. One of his most important achievements as a scientist and a medical doctor is that he was the first to identify the brain as the seat of thinking and reasoning. He also distinguished thinking from perception, and concerning perception he thought that the sensory organs were connected to the brain by channels (*poroi*; for instance, the optic nerve). With respect to physiology, Alcmaeon investigated sleep, death and the development of the embryo. For example, he thought that sleep is produced by the withdrawal of the blood away from the surface of the body to the larger vessels, and that we awake when the blood diffuses throughout the body again. Death, on the other hand, occurs when the blood withdraws entirely. The range of Alcmaeon's work in biology (including not only humans but also animals and plants) is remarkable for the early fifth century. Scholars take him to have motivated a shift of interest in early Greek philosophy from cosmology to biology.

Of special interest for the present purposes is that Alcmaeon offered the earliest known definition of health and disease. He was also the first to our knowledge to use a political metaphor to define them. He is reported to have thought that disease arises because of an excess of heat or cold, which in turn arises because of an excess or deficiency in nutrition (broadly along the lines of the like causes like principle outlined above). He claimed that the equality (*isonomia*) of the opposing power*s* that make up the body (e.g. the wet, the dry, the hot, the cold, the sweet, the bitter, etc.) preserves health, whereas the monarchy of any one of them produces disease. Alcmaeon's formulation of his medical theory in terms of political organization is the focus of Kouloumentas' essay in this volume. The essay makes two main original contributions to our understanding of Alcmaeon's

views. On the one hand, it re-assesses where Alcmaeon's theory of health and disease is to be positioned in its historical context, among his contemporaries' philosophical and medical texts. On the other hand, it delves into the key theoretical aspects of Alcmaeon's medical views, including the constitution of the body, the interaction of opposites and the aetiology of disease. Kouloumentas argues that for Alcmaeon there exists a kind of equilibrium *between* pairs of opposites, in addition to the equilibrium reached *within* each of them. Health is an egalitarian distribution of shares to the bodily constituents, which are depicted in the political metaphor as citizens whose antagonistic or collaborative tendencies affect the functioning of the state. Alcmaeon's views raise for the reader interesting questions regarding how powers combine, are distributed and are passed around.

Causal powers or dispositions are also very much at the centre of the Hippocratics's thinking about health and disease. Numerous passages and even entire works within the Hippocratic *corpus* deal explicitly with the active powers of foods, drinks or even activities (such as physical exercise), and also with our physical and mental dispositions (such as for instance robustness, intelligence, cowardice, tending to be sick in summer, etc.) How are these powers and dispositions related to each other? Are some of them more basic than others? Are they epistemologically and/or metaphysically reducible to the basic ones? How do the basic ones compose to give rise to the higher ones? Are the higher ones *new* emergent properties? Tiberiu Popa's essay explores these questions with special focus on *Regimen* I. Unlike most Hippocratic works, *Regimen* I investigates systematically the causal/constitutive connections between different orders of dispositions relevant to human health. The author of this treatise famously states that, in order to deal adequately with the subject of regimen, one has to grasp the physical constitution of the human body. Not unlike Alcmeaon, the author thinks that a flourishing human being enjoys a good balance of all her constitutive elements, and their respective powers. A proper regimen – a healthy life style, we would say – facilitates maintaining that balance. If the physician or dietician can identify the original 'ingredients' of the human body and their particular mixture in a given human being, he will be able to anticipate possible ailments and to mitigate or prevent them. From this stance, we learn that the author of *Regimen* I assumes that it is possible to make an inference from what is more easily accessible (the observable behaviour of the patient) to the nature of and ratio between the ultimate material constituents of the body (which are 'invisible'). This lead, which Popa pursues in his essay, helps to address metaphysical and epistemological questions regarding the relation between lower and higher level dispositions in the human body.

With Brian Prince's essay we turn to Plato's views on health and disease. In the eponymous dialogue, Plato has the character Timaeus outline a theory of bodily health and disease that has seemed to many commentators inconsistent, or at best disorganized and incomplete. Prince argues that the theory

is in fact more unified than it has appeared, and importantly it gives us an insight into the workings of physical causality in the *Timaeus*. In Timaeus's theory, health lies between perfect stability and a chaos of all possible motions of the elements constitutive of living beings. Prince argues that this indicates that Plato (via Timaeus) conceives of health as a state in which the body's powers and dispositions are activated *in the right way*, among a range of possible alternatives. The activation of the bodily powers can change depending on the location of their possessors. That is, particles of the elements have their own powers for movement, which explain why they move in the ways they do. These powers are activated differently when the particles are located within living beings to the way they behave when not so located. This stance reveals something new about the metaphysics of powers as Plato conceives of it in the *Timaeus*.

The three essays that then follow in this special issue concern Galen, the Greek medical doctor and philosopher who lived during the second half of the second century and whose views dominated medical thinking until the seventeenth century. Galen believes that the basic functioning of the human body is realized through the exercise of four principal powers: of attraction, retention, alteration and excretion. Such powers are 'outgrowths' of the fundamental physical powers of the basic opposites: the hot, the cold, the wet and the dry. (In addition, living beings have psychological abilities, such as the powers of calculation and of memory in the case of humans.) Health consists in proper functioning of the body and its parts; that is, in the unimpeded full exercise of its four principal powers. By contrast, disease is, in Galen's words, 'damage to one of the natural activities of the body'; these activities are damaged when something interferes in some way or other with the power whose exercise that activity is. Thus powers are at the very heart of Galen's physiology and nosology, and they also play a fundamental role in his pharmacology and theory of temperament. In his essay, Jim Hankinson aims to give a comprehensive and consistent account of the apparently very different statements Galen makes regarding bodily powers in different parts of his large *corpus*. Galen's views have seemed to commentators not completely coherent. For example, he says that the basic powers do not 'inhabit' our bodies as we do our houses; that is, presumably, they are not substantial or hypostasized but derive from the whole subject to which they belong as properties. Equally, he is clear that powers are relational items: a power is a power for affecting something determinate in some determinate way. They are also said to be efficient causes. But it is not clear how these different strands fit together. In examining them, Hankinson lays the foundations for a fresh interpretation of Galen's metaphysics of powers.

Building on this foundational work, Roberto Lo Presti's essay explores Galen's views on the metaphysics of powers from the angle of embryology, which involves the generative power of the seed of the father. Lo Presti focuses, in particular, on points of intersection between Aristotle's and

Galen's views on the male seed, to better understand how much they have in common, and to what extent and in what regard they differ with respect to the general metaphysics of powers and causation, upon which both theories are grounded. Lo Presti identifies one of the main differences between Aristotle's and Galen's views to lie in the fact that Aristotle posits that active and *passive* powers (and their respective actualizations) are needed to explain the embryological processes; by contrast Galen sees all powers involved as active ones. (The Neoplatonists's views on this matter are discussed in the last essay in this volume, by James Wilberding.)

The third contribution on Galen is Peter Singer's essay on his theory of health, with particular focus on two texts: *Matters of Health* and *Thrasybulus*. Singer pursues further and more broadly Lo Presti's work on the relationship of Galen to his predecessors – both in terms of the actual content of his theory of health and in terms of Galen's self-presentation. In his own written work Galen self-consciously adopts philosophical models and language, borrowed mostly from Plato and Aristotle, and also repeatedly proclaims allegiance to Hippocrates. But his actual intellectual forebears in the area of health, Singer suggests, are rather to be found in a tradition which Galen alludes to much less, and much less clearly: that of Hellenistic and in particular Alexandrian medical authors. At the same time, one specifically Aristotelian influence is suggested in Galen's notion of the 'more and less' within health.

Singer's essay looks into the nature of Galen's interaction with his intellectual predecessors, and what motivates Galen to present it in the way he does. It then focuses on reconstructing Galen's theory of health. The theory has three distinctive characteristics: it defines health in terms of balance (*summetria*) of elements and of performance of organic functions; it assumes a certain latitude (*platos*) within health which requires the doctor to tailor treatment to individual constitutions and life circumstances; and finally it presents health not just as a specialist's expertise but also, to some extent, as a body of practical knowledge which individuals can learn and apply for themselves. Finally, Singer considers the social-historical context in which Galen's work on health was written. To what extent are Galen's views of health only applicable to a narrow social elite? What is the nature of his polemic against other rival medical practitioners, in particular, physical and athletic trainers? What is the implied relation of expert to audience? This set of questions is further explored in Melinda Letts's essay, in connection with a contemporary of Galen's, Rufus of Ephesus.

Rufus of Ephesus's treatise *Quaestiones Medicinales*, on which Letts focuses, is unique in the known corpus of ancient medical writing. It has been taken for a procedural handbook serving an essentially operational purpose. But, Letts argues, with its insistent message that doctors cannot properly understand and treat illnesses unless they supplement their own knowledge by *questioning* patients, and its distinct appreciation of the singularity of each patient's experience, Rufus's work shows itself to be no mere

handbook but a treatise about the place of questioning in the clinical encounter. Letts' essay concentrates on two aspects of Rufus's thought that are unusual by comparison with other ancient medical texts: his distinctively person-centred rather than disease-based concept of questioning, and his extension of 'habits' beyond the dietary and occupational to include an indeterminate range of individual characteristics whose relevance to illness is not immediately obvious. In his quest for subjective information to set alongside observable facts, Rufus appreciates that illness cannot be understood simply through objective, measurable physical data. His treatise, with its exhortatory tone and phenomenological undertones, shows that he gave careful consideration to how the patient's perspective can help build medical knowledge, giving his work a greater philosophical significance than has previously been appreciated.

The special issue concludes with James Wilderbing's investigation of how the Neoplatonists think of causation and generation in the context of embryology, with special reference to Porphyry's *On How the Embryo is Ensouled*. The phenomenon of teratogenesis (or the coming to be of deformed or disabled offspring) poses a serious problem for all those who wish to see biological reproduction as a process guided by teleological principles (including Aristotle and Galen for example). This problem becomes even more serious for the Neoplatonists, since for them these teleological principles at work in biological reproduction ultimately derive from the intelligible world. Hence, any aberration from the natural biological plan effectively calls into question the causal efficacy of the intelligible world in the sensible world. *Prima facie* the Neoplatonists by and large point to matter as what is responsible for frustrating the natural goal-directed processes. But when we dig deeper into the sources, we discover another explanatory layer that restores the efficacy of the intelligible world. Even when the female menses (the proximate matter in human embryology) is ill-suited to fully take on the form of human being, higher causes such as the World-Soul may be credited with rendering the female menses such. Moreover, these same higher causes also see to it that in some such cases another form is supplied that does suit the matter. The Neoplatonists justify this interference 'from above' by appealing to considerations related to providence and transmigration: some souls being reincarnated deserve bodies with particular deficiencies.

In conclusion, this special issue introduces a variety of approaches and topics in ancient medical thought, with the ultimate goal of generating fresh interest in this fascinating area of research in the history of philosophy.

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