

‘Body and Spirit in Greek medicine and philosophy’

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The relationship between body and spirit, or body and mind, has always been one of the most puzzling questions in the history of human experience and self-reflection. For all the advances in medicine, brain-physiology, genetics and neuro-science, the ways in which mind and body, the mental and the physical interact, continue to be only partly understood. That the mind would be something completely independent and autonomous, as Plato believed, is a view that finds very few adherents today. Yet many of us are reluctant to adopt the materialist position that reduces mental phenomena completely to processes in matter. According to radical materialists, there is no such thing as a soul or a mind or a spirit, or consciousness; it is all a matter of electro-chemical processes happening in the brain. But leaving that rather extreme position aside, many of us instinctively, and on the basis of our own experiences – or, if you are a doctor or a psychiatrist, the experience of your patients – seem to prefer to think of body and mind as distinct but interacting on each other, or perhaps even as being two complementary aspects of one and the same thing without being completely identical.

In having this view, we are in good company, because it is, fundamentally, the Aristotelian position, which will occupy us for some time today. However, just how this interaction actually goes about, is still a bit of a mystery. For example, we all accept that there is a correlation between stress and heart disease. But how exactly does this work? Is stress psychological, or physiological, or both? How do emotions, feelings and beliefs ‘translate’ into physical terms? And conversely, how do physical conditions like blood pressure impinge on our mental and emotional well-being?

One of the reasons why questions such as these have proved so difficult to answer throughout the history of thought seems to be that it is not quite clear to which intellectual discipline they belong – or in other words, which field of scientific inquiry is most adequate and best equipped to provide an answer, if it is a matter of science at all. It is a question that traditionally belongs to philosophy, and in particular to the so-called philosophy of mind; or, more recently, to psychology, psychiatry, psychotherapy and a number of more holistic approaches to human bodily and spiritual health (as one finds these in non-Western medical traditions and some branches of alternative medicine). But it is also a problem that has occupied the minds of artists, poets and theologians, for it touches on questions of the nature of human creativity and freedom; and it even has metaphysical implications, since it relates to human mortality and immortality – in short the nature and meaning of human life. Indeed, one of the reasons why its puzzling nature is so infuriating is that we instinctively feel that this question touches on the essential nature of what it means to be a human being.

Now the ancient Greeks were very good at raising fundamental questions of this kind – and especially when it comes to the nature of man and the meaning of life. Even though their knowledge of anatomy and physiology was, of course,

very limited by today's standards, their awareness of the issues and the sophistication of their discussions are striking. Even in today's world of modern science, neural networks and artificial intelligence, the points made by the Greeks are still relevant to the way we speak and think about our emotions and feelings in relation to our bodies, especially when the conclusions of modern science seem to come uncomfortably close to reducing human beings to machines – admittedly, highly intelligently designed machines, yet devoid of free will or responsible agency. I refer to a recent collection of papers *The New Brain Sciences*,¹ which are concerned with neuro-science and, indeed, neuro-ethics, and which considers the effects of neuro-science on our concepts of human agency, responsibility, and free will. One of the authors contributing to this collection asks: 'Do we ever really act? For, if the true cause of our action is always a physical event (i.e. if all our mental experiences are ultimately nothing more than electro-chemical processes in the brain), we might not really be active agents at all but like people hypnotised or possessed by an alien force.'

Scientists may claim that the human brain is a machine that alone accounts for all our actions, but even while conceding that the brain may be necessary, the question is whether it *alone* accounts for our actions – and indeed whether it accounts for *all* our actions.

The question is, of course, what we mean by 'action' – and here again we come to the Greeks, especially to Aristotle, for whom action, *praxis*, involves and presupposes rationality, deliberation, judgement and freedom to decide and choose to do this rather than that – and while making that choice, being able to resist emotional and physical impulses tempting us in other directions. Actions are 'within our control': the starting point is 'within us', as he puts it. One may object that all this is just a matter of definition, and that Aristotle links action too closely with rationality and hence with human beings. Aristotle would concede that animals, though lacking reason, have not only perception but also memory, imagination and desire that set them in motion. But he would not be impressed by the objection about it being just a matter of definition. He would insist that it is of the greatest importance how we define the terms in which we are thinking and speaking about our own mental, cognitive and emotional states and experiences – and that these definitions should not be counter-intuitive, but somehow correspond with our gut-feeling. Thus he would insist that our instinctive refusal to accept that what we are experiencing is *just* physical changes in our brains – or, as Aristotle would put it: movements of the blood in the region of our hearts – says something about our own nature.

Thus the questions that are raised today are very similar to those raised by Greek philosophers and medical writers. The fact that in these respects we seem to have made so little progress in 2500 years of history should not worry us too much: on the contrary, is it not extremely reassuring to read articles like this? For they indicate that the questions are very fundamental and that asking them and considering them is part of a culture's self-reflection.

In today's lecture I want to look at only a few aspects of such questions as they were considered by Greek doctors and philosophers about the relationship between mind and body and the way they interact. I should say right from the

¹ Edited by Dai Rees and Steven Rose, Cambridge University Press, 2005.

start that even though I am using terms like 'philosopher', 'doctor', 'scientist', we should realise that these terms are perhaps somewhat misleading and anachronistic, because they pigeon-hole people whose interests and writings crossed the boundaries between subject-areas. Many Greek doctors, such as Hippocrates, Diocles, and Galen, combined hands-on clinical experience with the pursuit of philosophical questions about the nature of medical science, the methodology of diagnosis and prognosis, the nature of cause and effect relationships and indeed the extent to which such relationships can be known and ascertained. Conversely, people who have gone down in the textbooks as 'philosophers', such as Empedocles, Plato, Aristotle and the Stoics, took a great interest in medical topics such as the nature of health and the causes of disease, phenomena such as respiration, old age, sleep and dreams, mental and psychosomatic illnesses such as epilepsy and melancholy, and questions of embryology, reproduction, fertility and sterility. Greek thought, especially in the fifth and fourth century BCE, was almost by definition interdisciplinary. Thinkers like Galen and Aristotle were quite capable of wearing different hats on different occasions: the hat of the natural philosopher, the ethicist, the theologian, or the logician. And they took a great interest in, and listened carefully to what the practitioners of other disciplines had to say.

The Naturalisation of the Mind

My first topic is the idea that the soul, or the mind, is part of human nature. This may seem obvious to us. But we should bear in mind that notions such as soul, consciousness, awareness, imagination, were not so easy to express in naturalist, physicalist terms for the Greeks. To them, the word nature (*phusis*) connotes both 'origin' and 'growth' and 'development according to a fixed pattern', and thus is closely related to change or at least development. As Plato would say, it belongs to the world of becoming, of coming to be and passing away. Something natural to the Greeks always involves something material, indeed physical, corporeal, perishable. So the question is whether these attributes can be predicated of the soul. For to the Greeks, the soul was traditionally regarded as something of a different order, something that has a life of its own, that leaves the body temporarily during sleep or prophetic inspiration and permanently after death. This was an idea that appealed strongly to Plato and certain 'dualist' strands in Greek religious belief.

Yet other thinkers included the soul into the physical make-up of the human body. And medical writers took the lead here. The author of the Hippocratic treatise *On the Sacred Disease* (c. 420 BCE) provides an entirely naturalist account of epilepsy, a disease that was traditionally regarded as a form of divine or demonic possession of the patient's mind and body. 'Concerning the disease called "sacred"', he says, 'matters are as follows. In no respect is this disease in my view more divine or sacred than the others, but it has a nature and a cause just like all other diseases have a nature, in which they find their origin.' He substantiates this claim by means of an elaborate account of the physiological causes of epilepsy, including its origin in the brain, its hereditary character and its various manifestations. Interestingly, he nowhere uses the word 'soul', and he locates all mental processes (thinking, emotions, sense perception) in physical organs and tissues. His project is related to a wider tendency in Greek thought of

his time, viz. to provide natural explanations for phenomena hitherto explained by reference to direct divine action – e.g. thunder, earthquakes, etc. but also mental illnesses like madness or epileptic fits. Greek thinkers were looking for the ‘nature’, the *phusis* of things; and medical writers were seeking the nature of man: what is man, how is he composed, how does he function and work? And what is the nature of human failure, weakness, disease – bodily as well as mentally?

Another medical writer of the next generation, the author of the Hippocratic work *On Regimen* (c. 400 BCE), presents a similarly naturalist account of soul and mind. In his view, the soul is entirely material: it is made up of two elements, fire and water; but the proportion and balance between these elements can differ, and such variations lead to different characters and differences in mental and intellectual performance; and gross distortions lead to insanity and madness. What determines health or disease, both mental and physical, is the proportion between the elements of fire and water. This is the notion of *krasis*, ‘mixture’ or ‘temperament’ – a concept that was to have a long history. What is striking here is the author’s belief that, because all mental life resides in physical material conditions, it can be influenced and manipulated by physical factors, such as diet, drugs, food and drink and lifestyle – and thus also mental illness can be addressed by drugs and regimen. This was, of course, the world of Greek dietetics, a comprehensive set of rules covering eating and drinking, exercise, hygiene, working patterns, sleeping habits, sexual activity, etc. The author of *Regimen* is proud to have discovered a regimen that preserves health, or that can be applied correctively to correct a life style that is spinning out of control. This idea was further developed by the fourth century medical writer Diocles of Carystus, who was one of the leading authorities in the field of dietetics. And the idea that by a particular life-style one can enhance one’s mental performance was embraced by the later Greek medical author Galen (second century AD), who devoted a whole treatise to the claim that ‘the faculties of the soul follow the mixtures (*kraseis*) of the body’.

These ideas also had a considerable appeal on Aristotle. For although Aristotle was the pupil of Plato, he was also the son of a court physician, and in his work he repeatedly refers to what he calls ‘the distinguished doctors’. He was also a biologist, who examined life in all its various manifestations and degrees, and tried to account for it by means of one unifying theory. Perhaps the most fundamental aspect of Aristotle’s theory is his opinion that soul and body are not separate entities but two mutually complementary and inseparably connected aspects – the ‘form’ (*morphê*, *eidos*) and the ‘matter’ (*hylê*) – of one and the same entity, viz. a living being. Consequently, Aristotle holds, the philosophical analysis of all activities of a living being (*qua* living being) has to take account of both their formal and their material aspect. I refer to them as ‘aspects’ because they are not to be seen as physically separable ‘parts’, but can only be distinguished in our thinking and talking about them: in reality, they form an inseparable unity.

Thus Aristotle advances a psycho-physical theory of emotions like anger, which he defines both as a ‘seething heat in the region of the heart’ and as ‘a desire for retaliation’: these two definitions are complementary descriptions of one and the same emotional state, the former referring to the physical, the latter

to the psychological. According to Aristotle, each emotion or mental process should be described along these psycho-physical lines, just as, on a more general level, 'mind' and 'body' are two inseparable aspects of one and the same thing, a human being. Aristotle carefully steers a middle course here between idealism, which radically denies that mental states have any physical aspect, and reductionism, which reduces all emotions to physical processes.

Soul, according to Aristotle, is life, form, and body is matter; both need each other, complement each other. The soul is a set of capacities or functions informing the body and giving shape to its physical structure; at the same time, the body needs to be made of suitable material to make these functions work. Yet the soul is not just the life force, but also the dynamic structure and the organizational pattern according to which, and for the purpose of which, the physical body is shaped, constituted and internally arranged.

In speaking about soul and body in this way, it very much looks as if Aristotle is reducing the soul to a number of capacities, and that there is little room for notions like subjective awareness, consciousness etc. He sometimes uses the metaphor of 'attunement' here, and compares the process of sensational awareness to the chords of a lyre, each of which produces its own sound when being struck, or with a flammable substance that needs the activity of something else that sets it on fire. These comparisons seem to suggest that the sense-organ must not only have a certain suitability but must also, so to say, be tuned in such a way as to be able to react to the stimulus in a way that generates the response appropriate to it; the external stimulus just acts as the catalyst.

But this almost behaviourist picture is only one side of the coin. For Aristotle was very careful to distinguish his own theory from that of the Pythagoreans, who used the word 'attunement' (*harmonia*) to refer to the body-soul relationship. Aristotle does not reduce mind and intelligence and perception to just very sophisticated processes taking place in matter; there is room in his theory for consciousness, awareness, subjectivity, indeed character and personality; and this becomes most apparent when we get to his theory of imagination (*phantasia*), which is the faculty that translates sense perceptions into thoughts and judgements, and especially of mind (or *nous*), which is the highest intellectual power. *Nous* is something really special, and also somewhat mysterious: It is a bit like the ghost in the machine. It is the highest cognitive faculty – indeed Aristotle sometimes calls it 'divine', or 'the divine in us'; it is the only 'part' of the soul that is separable from the body and can aspire to immortality; not every body has it (slaves for example don't), and one only acquires it later in life: babies don't have *nous*, for *nous* enters later in your development, and 'from outside', as Aristotle puts it. And, very importantly, *nous* has no matter, it is incorporeal, it has no specific location, and it does not reside in a particular physical organ suitable to carry out its function.

The location of the mind

We have touched on a second issue that was characteristic of the Greeks' contribution to the philosophy of mind, viz. the question of the location of mental functions in specific places in the body. Thus Aristotle believes that all mental processes (except *nous*) are closely related to, if not located in the heart. The

heart is the central part of the body, both spatially and in terms of hierarchy. It is the part that is formed first in embryological development. It is the source of bodily heat and thus primarily responsible for nutritive functions. And it is the primary seat of emotions and sensations, for it houses the 'central sense organ', a kind of co-ordinating centre that processes the information derived from the peripheral sense organs (with which it is connected through the blood vessels) and that issues decisions to the limbs and other parts of the body involved in action and motion.

In taking this view, Aristotle radically departs from the view of the Hippocratic writer on epilepsy mentioned above. According to this author, the brain is an 'interpreter' (*hermêneus*); it is a kind of intermediary agent which receives the air from outside (inhaled through respiration), 'interprets' it, puts its stamp on it, and issues information, judgements and decisions to the rest of the body. In order to do so, however, it needs to be pure; and when its purity is affected by physical circumstances, or when things go wrong in the brain, the whole body suffers, as in the case of epilepsy and other forms of madness and mental illness. By contrast, in Aristotle's theory, the brain has no psychological significance, it is just there as a kind of refrigerator, balancing the bodily heat generated by the heart and exercising a cooling influence on the process of digestion.

We get a snapshot here of a debate that was to have a long history – a debate between physicians, philosophers, scientists, psychotherapists, but also poets and other intellectuals about the location of the mind and the physical basis of personality and the emotions. Throughout the history of medicine, various bodily parts were suggested as candidates, and all sorts of arguments and evidence were presented in favour of a particular thesis. But the debate was never fully settled until the late 19th century.

Aristotle was neither the first nor the last to advance the cardiocentric view. In Classical Greece and Rome, it was generally believed that the heart played a major role in the mediation between the mental and the physical. And initially it was the heart, rather than the brain, that was considered to be the seat of mental processes, including intellectual functions like thinking, memory and imagination. From Homeric times onwards, humankind's thoughts, beliefs, but also emotions and states of mind like anger, ambition, courage, valour, grief and pride were located in the upper parts of the thorax, in the diaphragm or the heart. And although the physiology of the heart and the pulse were only partly understood, there was little question about the central importance of the heart in the functioning of the human organism as a whole. The cardiocentric theory of the mind became the dominant view in antiquity and was upheld by medical writers but also by the Stoics, the influential Aristotelian philosophers, who regarded it as the seat of the 'ruling part of the soul' – the intellect.

However, it was characteristic for the argumentative nature of Greek medicine that there was widespread disagreement about this issue, and rival views continued to have their advocates. Several medical writers and philosophers, such as Empedocles, attributed a major role to the blood as the intelligent and life-giving substance in the body. And there was also the encephalocentric theory, defended not only by the Hippocratic author quoted above but also by the philosopher Plato. Plato distinguished three 'parts' of the

soul – mind, spirit and desire – which he located in the brain, the chest and the belly respectively.

Yet while Plato and the Hippocratic writers based their views largely on speculation and on occasional findings derived from animal anatomy, a more 'scientific' view emerged when Greek physicians in 3rd century BC Alexandria dissected the human body and discovered the nervous system. Their views were more fully developed by the Roman authority Galen in the second century CE, who in a series of experiments on animals showed that it was the brain that was the origin of the nerves and the centre of sensation, consciousness, speech and intelligence, thus depriving the heart of any cognitive significance. Yet Galen's experiments were not sufficient to persuade the Aristotelians, who continued to stress the central role of the heart. For emotions, they argued, also have a cognitive aspect to them, just as beliefs and thoughts are often accompanied by feelings of pleasure and pain.

In order to account for this, Greek medicine characteristically resorted to two speculative ideas: the concept of *pneuma* or 'spirit', a kind of delicate airy substance within the body that was believed to mediate between the brain and the heart, between thoughts and emotions, and to be responsible for the translation of 'mental' states into 'physical' action and vice versa; and 'sympathy' (*sympatheia*), a notion that was called in to account for the emotional experiences in different bodily parts, and which proved to be a very useful concept to refer to psychosomatic connections that escaped empirical validation.

Today, modern medicine has little time for concepts such as 'spirit' or 'sympathy'. Yet the Ancient Greek view of the heart and viscera's role in our emotional states remains deeply embedded in popular culture. We still, apparently, make decisions with our heart as well as our head.

Genius and madness

So far, we have mainly been thinking about healthy minds, or degrees of healthiness – or at any rate about health and disease as clear, distinct states. But again the Greeks realised that health and disease are relative notions admitting of variation of degree. Moreover, they believed that the health of one part of the body (or the soul) can co-exist and correlate with the sickness of another part. This led to the paradoxical view that a particular physical weakness or disease enhances mental or intellectual experience or, in other words, that particular kinds of exceptional mental brilliance somehow require an unhealthy state of the body. As examples of such mental brilliance the Greeks mention creative performances in poetry, art, visionary statesmanship, and even in philosophy!

This belief, which was first expressed in the Aristotelian school, was a variation on the idea that genius and madness verge on each other and that the one easily slips into the other. This is a very old idea, which is already found in Plato's doctrine of the positive and negative forms of madness expressing themselves in activities like prophecy, ecstasy, etc. But what was new in the fourth century was that the medical writers, and in their footsteps Aristotle, provided a physiological explanation for this delicate relationship. In a famous chapter from the Aristotelian *Problems*, this physiological explanation centres round the notion of black bile, one of the fluids that were believed to be present in the body, and the notion of the melancholic 'constitution', 'mixture' or

'temperament' (*krasis*). Melancholics, i.e. people with a constitution dominated by black bile, were believed to be particularly prone to such states of great mental elevation and creativity (verging on, and indeed often slipping into mental insanity), and the reason for this was believed to lie in their physical constitution, particularly in the fluctuations between warm and cold in the black bile and in the influence of *pneuma*. And indeed, as in the Hippocratic treatise *On Regimen*, the variability of this physiological equilibrium was believed to be the cause of the mental instability of melancholic people. For 'melancholy' in Greek was usually synonymous with 'madness' or 'insanity': and in this text we find that it refers both to the ecstatic, or 'manic' form of depression as well as the 'depressive', 'despondent' type, thus providing an ancient description of what is nowadays known as the bipolar personality disorder. But once a delicate balance between these two states – a balance between excessive heat and excessive cold – is established, the Aristotelian *Problems* argue, this enables the melancholic to come to his outstanding creative achievements. Again, we have a further example here of a 'naturalisation' of a phenomenon that used to be regarded as a manifestation of divine agency – an attempt to connect the lofty achievements of the human genius with the presence of a dark, sticky bodily fluid, black bile. This idea was, of course, of profound influence in later European thought on imagination and creativity, and variations of this medicalisation of the creative genius can be found in thinkers as diverse as Ficino, Goethe, Rimbaud, Thomas Mann and Gottfried Benn.

Doctors of the body, doctors of the soul

The naturalisation of human achievement, creativity and excellence, as it was undertaken in Greek medicine and natural philosophy, also carried with it certain risks, for it came dangerously close to a reductionist view of human mental life and a determinist, if not racial, view of human ability. Is outstanding intellectual and creative performance in poetry, art, visionary statesmanship, and even philosophy, all down to one's temperament, one's *krasis*, the amount of black bile in one's body – or, to mention a modern equivalent, to one's genes? The Greek thinkers were well aware of these dangers, and many of them refused to accept the materialist implications of these theories. My final example of such a thinker dates from late antiquity and the beginnings of the Byzantine period: it is John Philoponus, a Christian Neoplatonist of the 6th century AD who wrote commentaries on the works of Aristotle, but who was also strongly interested in physics and medicine and well aware of the medical doctrines of Galen. Thus his work presents an impressive attempt at synthesizing various traditions of thought, without his intellectual independence giving way to eclecticism. In his commentary on Aristotle's work *On the Soul*, Philoponus discusses Aristotle's claim (which we have referred to above) that all mental processes involve some kind of bodily change as well. He considers the interpretation of this claim advanced by Galen and other medical writers to the effect that 'the faculties of the soul follow the mixtures of the body', and he mentions the melancholics as an example. Yet Philoponus insists that although the influence of the body on the soul can be very profound and extend even to cognitive faculties like memory and discursive thought, this does not mean that mental processes are governed by physical states. This is only the case, he says, if something has gone wrong in

the psycho-physical composite of the human organism. And he points out that the combination of a frugal, healthy regimen with philosophy, as a kind of care for the soul, can enable people to resist the movements of the body and even impose their will on bodily states. Thus without denying the close relationship between body and soul, Philoponus insists that a rigorous physical and spiritual regime allows a human being to be free from the dominance of his bodily temperament.

In taking this line, Philoponus is in fundamental accordance with Aristotelian doctrine. For Aristotle, too, accepts that the exercise of free will, rational deliberation and theoretical thinking can only take place in favourable physiological circumstances. But once these ideal bodily conditions are present, they constitute a condition of balance or equilibrium on top of which an intellectual, incorporeal process can take place. In the study of living beings, and of man in particular, Aristotle may have felt that what is needed is something that goes 'beyond' the natural, psycho-physical, composite unity of a human being – indeed something divine, the *nous*, which both emerges from and supervenes on the bodily *krasis*, something that is both connected with it and goes beyond it – and must do so in order to retain its independent status as an explanatory principle. Aristotle is here carefully balancing the two aspects of what it is to be a man, viz. his status as an animal and his being related to the divine, and he is steering a middle course between two extremes. For on the one hand, to detach the essence of man completely from his physical make-up would run counter to Aristotle's biological approach to man as a natural living being. Yet the implication of Aristotle's view on the divinity of *nous* is that the fullest realisation of what it is to be a human being is to go beyond the limits of corporeality and mortality and to become, if only temporarily, a god.²

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² For a fuller account of the topics covered in this lecture I should like to refer the reader to my book *Medicine and Philosophy in Classical Antiquity. Doctors and Philosophers on Nature, Soul, Health and Disease*, Cambridge, Cambridge University Press: 2005.