

History of the Mind–Body Problem

EDITED BY TIM CRANE AND SARAH PATTERSON

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Introduction

Tim Crane and Sarah Patterson

Herbert Feigl once described the mind–body problem as ‘a cluster of intricate puzzles – some scientific, some epistemological ... some semantical and some pragmatic’.¹ Reflection on the current debate on the mind–body problem would seem to support Feigl’s judgement: although most writers on the subject testify to the importance of the problem, many offer very different interpretations of what the problem is. For some, the problem is fundamentally a causal problem, a problem about the causal interaction between mental phenomena and the body.² For others, the problem is an explanatory one: what kind of explanation can be given of mental phenomena, consistent with the conception of the world given to us by contemporary science? In particular, the distinctive characteristics of the mind, intentionality and consciousness, are features of which (it is claimed) current science has no adequate account, and in the case of consciousness at least, the problems in giving such an account are sometimes taken to be insuperable.³

These different conceptions of the problem tend to be accompanied by different conceptions of the cause of the problem: for some, the problem arises because of the assumption that mind and body are distinct (essentially, dualism). This assumption then demands that we explain how mental causation is possible, if mind and body are distinct things. But on other views, the problem arises from fundamental physicalist assumptions. It is because we think that the world is completely physical in nature, that we find it hard to understand how mental phenomena (specifically subjectivity and consciousness) fit into the world so conceived. Here physicalism, the view that the world is fundamentally physical, is not the solution to the mind–body problem, but part of what poses the problem.⁴

Further disagreement emerges about the extent of our present understanding of the problem, and the extent to which any progress has been made. Thomas Nagel is well-known for his pessimism on this score, and has said that a solution to the mind–body problem ‘will alter our conception of the universe as radically as anything has to date’.⁵ Others think not only that the solution has been found, but that it is relatively obvious. John Searle has said that the solution to the mind–body problem ‘has been available to any educated person since serious work began on the brain nearly a century ago’. This solution is that ‘mental phenomena are caused by neurophysiological processes in the brain and are themselves features of the brain’.⁶ Yet another approach is expressed in Colin McGinn’s claim that ‘one of the peculiarities of the mind–body problem is the difficulty of formulating it in a rigorous way’. McGinn is well-known for his Nagel-like pessimism about our inability to make progress with the mind–body problem; but he also thinks that part of the problem lies in giving an adequate expression of the problem itself.⁷

What we have, then, in the contemporary debate, are different views of how the problem should be stated, different views of its source, and different views of its present condition and importance. It is clear, then, that the question ‘what is the relation between the mind and the body?’ and the question

‘what is the place of the mind in the physical world?’ do not raise just one or two philosophical problems. Rather, they are ways of expressing many very different kinds of concern and preoccupation. The essays in this book are attempts to understand some of these various preoccupations from a broadly historical perspective.

Looking at the history of the mind–body problem in western philosophy at some distance, we can detect three very general trends of thought, or paradigms, which have dominated much discussion: the Aristotelian paradigm, the Cartesian paradigm, and the scientific materialist (or physicalist) paradigm. Each of these paradigms is touched on in this collection. Rae Langton’s essay discusses the currently lively debate about the extent to which it makes sense to classify Aristotle as a functionalist. M.W.F. Stone explores one of the issues – the question of monopsychism – raised by the absorption of Aristotle’s *De Anima* into the philosophy of the Middle Ages. The essays by Susan James, John Cottingham and Sara Patterson are concerned with various aspects of Descartes’ conception of mind, including the way his account of mind has been interpreted, misinterpreted and elaborated by twentieth-century thinkers. The main issue for materialist or physicalist theories of mind has been consciousness, and the last three essays in the book deal with the various issues surrounding the notion of consciousness. Neil Campbell Manson examines the nineteenth-century sources of the conscious/non-conscious contrast, Tim Crane relates the contemporary debate about the qualitative features of experience (or ‘qualia’) to the original use of the concept of qualia in early twentieth-century thought, and M.G.F. Martin gives an account of the nature of the problem of perception in the twentieth century. The essays therefore cover a wide range of themes, writers and philosophies; that all these can be brought under the heading of the mind–body problem is more evidence for Feigl’s claim about the problem.

Aristotle’s *De Anima* is our starting point. In recent philosophy of mind, there has been intense discussion about how to understand and classify Aristotle’s conception of the soul in contemporary terms.⁸ Aristotle’s view, called hylomorphism, is that the soul is the form of the body’s matter. The body is ‘ensouled’ matter, the soul imposes a form on the matter of the body. Should this view be thought of as a materialist view or a dualist view, or neither? Or is it even possible to impose our contemporary classifications upon the theories of antiquity with any precision? Aristotle’s view certainly has affinities with materialism, since the whole person is in a sense ‘nothing over and above’ its matter organised in a certain way. But the view also seems to have a dualist element, since the matter needs the soul in order to be the thing it is: it would clearly be wrong to think of Aristotle as some kind of ‘reductionist’. So neither classification seems appropriate. Of course, in one sense this is hardly surprising, since it is arguable that the kinds of views which we now think of as materialist and dualist have their origins in the metaphysical climate (the scientific revolution of the early modern period) which was explicitly hostile to Aristotle’s way of thinking about substances.

Some years ago, Hilary Putnam and Martha Nussbaum proposed an alternative: Aristotle’s conception of mind should be thought of as a prototype of the functionalist conception of mind pioneered (and later rejected) by Putnam in the 1960s and 1970s. According to functionalism, mental states should be thought of in terms of their characteristic causal roles: it is not essential to a mental state that it has a certain physical nature, what is essential is rather the causal role it plays in the mental life of the creature.

In a much discussed paper, Myles Burnyeat rejected the Putnam/Nussbaum interpretation.⁹ Burnyeat argued that Aristotle cannot be considered a functionalist not so much because of features of his

conception of mind, but because his conception of *matter* is so different from that of today. Functionalism assumes a conception of matter as basically homogenous; everything, animate or inanimate, is at bottom made of the same kind of stuff. From the functionalist perspective, what makes one kind of object the thing it is is not the kind of matter which makes it up, but the functional or causal role which the matter plays. Hence functionalism's characteristic emphasis on the multiple or variable realizability of mental states: the idea that creatures with very different kinds of material or chemical constitutions could share mental states, if these different constitutions realised the same kind of causal profile. Burnyeat argued that this kind of view cannot be attributed to Aristotle, since on Aristotle's conception, the matter out of which a living organism (or one of its organs) is made is not just contingently related to the function it performs; rather, the matter out of which a mind is made is something which is essentially capable of awareness or consciousness. Burnyeat claims that it is this mysterious – some would say 'magical' – conception of matter which is foreign to contemporary philosophy, making it impossible to read our contemporary ideas about matter and function back into Aristotle's conception of the soul as the form of the body.

Langton distinguishes various strands in the functionalist programme, and points out that Burnyeat's argument, if successful, applies only to a functionalism committed to physical realisation; but the basic idea of a functionalist account of mental states ('basic functionalism') need not be so committed. Langton argues that ultimately it is function, rather than matter, which presents an obstacle to viewing Aristotle as a functionalist: the abstract, quasi-mathematical character of functional definition poses a more serious difficulty for the interpretation than does Aristotle's magical matter.

In whatever way it might relate to contemporary discussions, the Aristotelian texts were central to the philosophy of mind in the Middle Ages, and the intense discussion of *De Anima* in scholastic philosophy is one of the themes of M.W.F. Stone's paper. Stone takes as an example the debate over 'monopsychism' in the thirteenth century. This is the view that there is only one intellectual soul. One problem which the medieval discussions centred on was: if the soul is the form of the body, then how is this consistent with the Christian doctrine of the immortality of the soul? If the intellectual or rational soul is the body's form, and Aristotelian forms do not exist without being the form of some matter, then the problem is apparent. Stone argues that the monopsychism controversy had its origins in the various attempts to reconcile Aristotle's views on the soul with Christian theology. For the question about immortality raises another, more fundamental one: how is the intellect to be united with an individual human being? Averroes had answered this question by saying that there is only one active intellect. Sigward of Brabant (c.1240–1284) followed him, at least at one stage of his career. Saint Thomas Aquinas opposed this Averroist view, and defended the more natural view that there are many intellectual souls, and what he took to be the Aristotelian view that each body has a substantial form which is its soul. But the rational soul is also an 'immaterial form' which has its own kind of 'subsistence' and this is intended to explain its immortality (more on this below). Thus Thomas attempted to combine the hylomorphism of Aristotle with the doctrine of the immortality of the soul. But, as Susan James points out in her essay, the tension between these two views remained, and the hylomorphic view was superseded by a new metaphysics of mind and matter, of which Descartes was of course one of the leading proponents.

Turning to Descartes reveals various ways in which the concerns of contemporary philosophers are in certain respects distorted by historical preconceptions. One example of this can be given by looking

the standard kind of history of the mind–body problem, as it is often given in introductory books in the philosophy of mind. Readers are often introduced at first to the question, are mind and body one or two and then given as their first answer the Cartesian dualist answer: mind and body are distinct things. The Cartesian view is sometimes said to be the view of pre-philosophical commonsense. Sometimes Descartes' views are introduced only to be refuted by relatively simple argument, while sometimes the force of the views is acknowledged as the reason for their dominance and perniciousness. Here Descartes' contribution is conceived retrospectively as articulating the view of commonsense, and presenting a picture of the mind which is, though intuitively attractive, ultimately deeply flawed.¹⁰

One difficulty with this way of putting things is that the Cartesian view has to be presented as plausible and tempting, if it is to be the view which we are inclined to believe before serious philosophising has begun; but, the view has to be so indefensible as to be refuted by elementary argument. So, we are supposed to feel the intuitive pull of the idea that the mind is a non-spatial immaterial substance with its own causal powers, but then we are told that actually, the existence of such substances is incompatible with the laws of physics. One might legitimately wonder why philosophers should need to refute such a view in the late twentieth century; and a student with no knowledge of Descartes' actual texts might wonder why Descartes' own contribution is so widely discussed and highly regarded. Examination of Descartes' writings yields, however, a very different picture of his dualist philosophy, as the papers in this volume by Susan James, John Cottingham and Sarah Patterson show.

Patterson's paper contrasts the popular image of Descartes' philosophy of mind (what James calls the 'iconic' Descartes) with the philosophy actually revealed by his texts, and their historical context. According to the standard conception of Descartes' philosophy alluded to above, Descartes' concerns were at bottom epistemological: at the heart of his philosophy is the problem of scepticism about the external world, and the Cartesian picture of the mind, as Patterson says, 'emerges from the battle with scepticism'. For in order to refute the sceptic, on this way of thinking, Descartes adopts a conception of mind which bases knowledge on the 'foundations' of what is immediately given to the mind. This is the realm of the immediately knowable, that which is knowable with certainty, and this idea of the mind as 'private theatre' with no essential link to the external world is supposed to be Descartes' legacy for contemporary philosophy.

The trouble with this conception, however, is that it leaves Descartes with a conception of mind and knowledge which is sensory or quasi-sensory in nature. Yet Descartes explicitly says that he is trying to escape from the scholastic and Aristotelian idea that the senses are the source of knowledge. Indeed Descartes' most striking innovation – the conception of the physical world as pure extension, the subject-matter of a purely mathematical physics – is left out of the traditional picture of his philosophy. It is the truth of this idea of a world knowable not through the senses, but through the intellect alone, which Descartes aimed to introduce to replace the Aristotelian view of substantial forms. The sceptical doubts are doubts about the ability of the senses to give us knowledge. The accompanying conception of the mind having as its sole attribute thought is introduced in the Second Meditation not as the residue of the sceptical doubt, but as the product of a reflection upon what belongs to body and what belongs to mind. Here Descartes' aims are to establish that mind is not a mode of body, but a complete thing, a substance. The doubt distinguishes what belongs to this thing or substance from what belongs to matter. These clear and distinct concepts of thought and extension, innate in the intellect, replace the sense-based scholastic

conception of the world with the Cartesian geometrical picture.

However, it is well known that Descartes did not abandon everything he had learned from his predecessors. Susan James' paper traces the sources of Descartes' conception of mind both in his new conception of the physical world, and in what he still preserves from the Aristotelian tradition of his scholastic predecessors. One of the major issues in the high Middle Ages was how to explain the immortality of the soul within a hylomorphic framework. Aquinas answered this by saying that the intellectual capacities of the soul can operate independently of the operation of the body. While a body is needed for sensation and passion, the body plays no part in judgement or volition. So the soul has a form of activity which, as James says, 'transcends the body altogether, and gives it the status described as subsistence'. Since the rational soul subsists, it does not die when the body does.

But this raises two further questions: first, how can a genuine Aristotelian accept that the intellectual soul is an exception to the rule that matter and form must always go together? And second, how can the operations of the intellectual soul be independent of perception and sensation, if the latter are required for knowledge? James shows that Descartes answered those questions and thus in effect resolved the tensions in scholastic philosophy and theology. He answered the first question by dismissing the theory of substantial forms as un-explanatory. By defining the soul as a substance whose essential attribute is thought, Descartes removed the need to think of the intellectual soul as one kind of soul among others; the question of the soul's uniqueness does not arise (as indeed it should not, from a Christian point of view). Descartes in effect answers the second question, as we noted above, by denying that the senses are the ultimate source of knowledge about the world. Descartes accepted the Thomist distinction between the capacity for will and judgement on the one hand, and the capacity for sensation and passion on the other, and he thought that the soul can only exercise its sensitive powers when united to the body (this is part of the point of his famous remark in the Sixth Meditation, that he is not lodged in his body 'like a pilot in a ship'). But the sensitive (and the vegetative/nutritive) 'powers' of the soul are not Aristotelian capacities, but purely mechanical operations of matter in motion. The soul, properly so-called, is an entity characterised by its thinking. And the capacity to think does not depend on the body or on perception.

What Descartes takes from the Aristotelian view, then, is what James calls the 'classification of the interior of the soul'. But his view of the relation of the soul to the body is very different from Aristotle's. While Descartes solves the problem of the immortality of the soul, and rejects the conception of perception and sensation which leads to the Aristotelian problem (how does the rational soul interact with the sensitive soul?), his classification of mind and body gives him a new problem: how do states of the body interact with states of the soul? The question is particularly pressing in the case of perception, sensation and the passions: these are not states of the soul alone, but only of the soul-body union. But how exactly we are supposed to conceive of this union within the official Cartesian metaphysics is not a question which Descartes ever satisfactorily answered.

John Cottingham explores further the interior of the Cartesian soul, and raises the question of the extent to which contemporary philosophers are right to attribute to Descartes the conception of the mind as a private inner theatre, populated by 'qualia', the irreducibly subjective properties of certain mental states (Cottingham uses the word 'phenomenology' to describe the study of such properties; others use the word to describe a somewhat wideranging study, applying to any aspect of how the mind appears¹). Descartes is often charged with believing in such a subjective 'realm'.¹² A distinction is often made

contemporary philosophy of mind between these 'subjective' or 'phenomenal' properties or states of mind, and intentional states, states which represent the world or have 'representational content'. Brentano believed that this intentionality, the mind's direction upon its objects, is characteristic of all mental phenomena.

One of Cottingham's aims is to show that Descartes' conception of mind is much closer to Brentano than it is to the view which puts 'qualia' at the centre of the mind. Descartes' conception of an idea – as opposed to that of a thought – is the idea of something with representational content or intentionality, and the distinction between pure ideas and the confused and imprecise ideas of sense is a distinction between kinds or degrees of intentionality. Even sensory ideas have something 'indicated to the mind' as it may be, in pain some damage to the body is indicated. If Cottingham is right, then Descartes is shown to be closer to contemporary intentionalist conceptions of the mind than to those who postulate ineffable qualia at the heart of our experience of the world.

'Qualia' is one of the terms in which the contemporary mind–body problem is posed. Other terms which indicate the same problem-area are: subjectivity, consciousness, the first-person point of view or perspective. Sydney Shoemaker says:

In common with many other contemporary philosophers, I see the mind–body problem, not as the problem of how a nonphysical mind can interact with a physical body, but rather as the problem of how minds can be part of a fundamentally physical reality. In part this is the problem of how certain widespread 'Cartesian' intuitions about mind can be either explained away, i.e. shown to be illusions, or else shorn of their apparent dualist implications. More generally, it is the problem of how distinctive features of the mental – intentionality, consciousness, subjectivity etc. – can have a place in a naturalistic worldview which sees minds as a product of biological evolution and as having a physico-chemical substrate in just the way other biological phenomena do.¹³

Shoemaker here expresses a common view among contemporary philosophers who accept the basic assumptions of our third paradigm, the materialist or physicalist paradigm. In broad outline, the dialectic of the mind–body discussion looks like this: dualism faces the problem of how a non-physical mind can interact with the physical world; materialism (or physicalism) solves this problem by identifying the mind with something physical. But having made this identification, physicalists need to explain how something purely physical can have a conscious point of view on the world, how it can have subjectivity. The mind–body problem for materialists is the problem of explaining the place of consciousness in the material world.

Of the many questions which arise here, one concerns the clarification of the idea of consciousness. And an essential part of this clarification concerns the relationship between the conscious and the unconscious. This is the topic of Neil Campbell Manson's paper. Descartes is often attributed the view that all mentality is conscious; these days, most are happy to accept in principle the idea of unconscious mentality. Where did the idea of the unconscious mind come from? What is the unconscious supposed to be, and what makes it mental?

In answering these questions, Manson traces the sources of four different ideas of the unconscious in eighteenth and nineteenth century thought. The first idea is just the relatively simple idea of something which is not in one's occurrent consciousness, something which is available for conscious inspection

although not presently under focus. The second, which Manson calls the 'psychological unconscious', is the idea of that which is needed to explain or underpin consciousness: unconscious mechanisms, causes and conditions of consciousness, some of which are only mental in a derivative sense (i.e. because they give rise to something mental). The third is the 'metaphysical unconscious'. Here Manson locates the views of Leibniz (often considered to be the originator of the idea of unconscious mentality, with his idea of 'insensible perceptions') and Schopenhauer's idea of Will. The metaphysical unconscious may be thought of as part of an attempt to use mental or quasi-mental concepts to explain the fundamental metaphysical structure of reality. The final notion arose from the problem with reconciling psychological laws with apparently anomalous cases of mental phenomena. In these cases, unconscious mentality is used to explain these departures from law. Manson takes the examples of Sir William Hamilton's laws of association, and Freud's interpretation of dreams. (Thus Freud, sometimes considered the 'discoverer' of the unconscious, is shown to be part of a broader tradition.) Manson points out that the big difference between the discussions of mind which lead to these four conceptions and the contemporary discussion is that contemporary philosophy of mind appeals to a 'consciousness-independent' notion of representation. This makes it easy for contemporary thinkers to embrace the idea of unconscious mentality; their problems are with the understanding of consciousness.

One way to look at the matter is as follows. Once the 'consciousness-independent' idea of representation is in place, then the question arises as to how to fit consciousness into the picture of mind which this conception of representation offers. If representation is consciousness-independent, then to say that the mind is a thing which represents is not to say anything about its conscious character. (Compare Descartes, who held that thought is always conscious, and therefore did not have a consciousness-independent view of thought.) One option is to explain consciousness in terms of a different kind of thought – the 'higher-order thought' theories of Rosenthal and others. That is, one explains what it is to consciously think that *p* in terms of the higher-order thought that one is thinking that *p*. A more popular approach is to claim that some kinds of consciousness derive from properties which have nothing essentially to do with representation or thought: these properties are qualia.

Recent discussions of qualia have, however, given rise to many controversies and puzzles, one of which is addressed in Tim Crane's contribution to this volume. The puzzle Crane begins with may be put like this: some philosophers think that it is obvious that there are qualia, others deny their existence. But if qualia are those properties of a state of mind which make it have the conscious character it does, how can this be so? For a state of mind's conscious character ought surely to be open to inspection by the subject of that state; so a moment's inspection of our inner lives should show whether there are qualia or not. How then can there be a substantial debate over the existence of qualia?

Crane approaches this problem through a related discussion over the idea of sense-data, the supposed objects of perception. The essential idea behind sense-data theories, Crane claims, is that experience is (or seems to be) relational: something is 'given' or 'presented' to the mind in experience. The idea that sense-data are mind-dependent objects comes when we consider the impact of the arguments from illusion and hallucination (see also Martin's paper on this point). Crane argues that if we want to preserve this view of the nature of perception, then we should adopt a conception of perception as intentional. But what about the 'qualia' in perception? Here one central question is whether we should think of the 'subjective' qualities of experience as being intrinsic non-intentional properties of experience, or whether they can be

characterised in terms of the idea of intentionality. After having traced the idea of qualia from its origin in early twentieth-century philosophy to the present day, Crane claims that there is nothing in the various original motivations for qualia which require one to accept a conception of qualia as intrinsic non-intentional properties.

M.G.F. Martin's paper also addresses the problems surrounding the idea of subjective experience, concentrating on the history of the problem of perception. Martin starts by discussing the shift which has occurred in the philosophy of perception in the twentieth century: while in the pre-war years the discussion was about sense-data and the objects of perception, in the last years of the century discussion came to be about intentionality and qualia. What is the relation between these two discussions? Martin's paper gives an account of the reasons for this shift, and by tracing discussion back to Hume's treatment of sense-perception, he identifies an underlying problem of perception to which all theories can be conceived as responding. His account is based on the tension between two ideas which, he claims, are at the heart of the concept of experience. The first is that experience presents its objects as mind-independent; we 'see through' the experience, as it were, to the objects themselves. This he calls *Transparency*. The second idea, which Martin calls *Actualism*, is that when one experiences something as having a certain property, this property is actually instantiated in some object. Both these principles are intuitively plausible, but the tension between Transparency and Actualism becomes apparent when we consider the possibility of a hallucination, where it seems that something with certain properties is in front of one, but there is nothing there. To hold onto Transparency, one might say that the experience merely *represents* that there is an object with certain properties in front of one; but then one must reject Actualism. On the other hand, to hold onto Actualism, one must hold that the object which instantiates the property in question is a mind-dependent object; but then one must reject Transparency. In effect, the first option is taken by contemporary intentionalist theories of experience, while the second is taken by the old-fashioned sense-data theorist. Thus Martin shows how the two debates about perception are unified. But he goes further: for it is possible to hold on to Actualism and Transparency if one rejects the idea that one is in the same kind of mental state when hallucinating as when perceiving. For the Actualism and Transparency are constraints on perception proper; and this view (which Martin calls 'Naive Realism') must then hold that hallucination is a completely different kind of mental state from perception proper. The fact that one cannot distinguish, 'from the inside', between a perception and a hallucination does not settle the debate here. For, as Martin claims, one response to the history of the problem of perception is the realisation that experiences can be deceptive, not just about the world, but about themselves.

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Notes

- [1](#) “The “Mental” and the “Physical”” (Minneapolis: University of Minnesota Press, 1967), p.373.
- [2](#) See e.g. Keith Campbell, *Body and Mind* (London: Macmillan, 1971).
- [3](#) See, for example, Thomas Nagel’s famous discussion in ‘What is it like to be a bat?’ in *Mortal Questions* (Cambridge: Cambridge University Press, 1979), and the recent debate which to some extent follows Nagel’s, of which David Chalmers’ *The Conscious Mind* (Oxford: Oxford University Press 1996) is representative.
- [4](#) See, for instance, the contrasting views of the mind–body problem taken by Jerry Fodor and Sydney Shoemaker, in the anthology edited by R. Warner and T. Szubka, *The Mind–Body Problem* (Oxford: Blackwell, 1994).
- [5](#) Thomas Nagel, *The View From Nowhere* (Oxford: Oxford University Press, 1986), p.51.
- [6](#) John Searle, *The Rediscovery of the Mind* (Cambridge, MA: MIT Press, 1992), p.1.
- [7](#) Colin McGinn, ‘Can we solve the mind–body problem?’ in *The Problem of Consciousness* (Oxford: Blackwell, 1991), p.2.
- [8](#) Notable is the recent collection edited by Martha Nussbaum and Amélie Oskenberg Rorty, *Essays on Aristotle’s De Anima* (Oxford: Oxford University Press, 1992). For more bibliography, see the footnotes to Rae Langton’s paper.
- [9](#) Myles Burnyeat, ‘Is an Aristotelian philosophy of mind still credible? (A draft)’ in Nussbaum and Rorty (eds), *Essays on Aristotle’s De Anima*.
- [10](#) For the first kind of view, see Peter Smith and O.R. Jones, *The Philosophy of Mind* (Cambridge: Cambridge University Press, 1998) for the second kind of view, see Kathleen Lennon, Paul Gilbert and Stephen Burwood, *The Philosophy of Mind* (London: UCL Press, 1998) and Anthony Kenny, *The Metaphysics of Mind* (Oxford: Oxford University Press, 1989).
- [11](#) See Gregory McCulloch, ‘The very idea of the phenomenological,’ *Proceedings of the Aristotelian Society* 93, 1992–93.
- [12](#) See, e.g., Robert Brandom, ‘Study Guide’ to Sellars, *Empiricism and the Philosophy of Mind* (Cambridge, MA: Harvard University Press, 1997).
- [13](#) Sydney Shoemaker, ‘The mind–body problem’ in R. Warner and T. Szubka (eds) *The Mind–Body Problem*, p.55.

1 The musical, the magical, and the mathematical soul¹

Rae Langton

The musical soul

At the beginning of his treatise on the soul, Aristotle considers the opinions of his predecessors, his avowed purpose being to ‘profit by whatever is sound in their suggestions, and avoid their errors’ (*De Anima*, 403b 23–4).² One such opinion is that ‘the soul is a kind of harmony’ (407b 30). This theory appears in Plato’s *Phaedo*, where the relation of soul to body is compared to the relation of a lyre to its harmony and its strings. What is said of soul can equally be said of the harmony, or attunement:

the attunement of a lyre and its strings is something unseen and incorporeal and very lovely and divine in the tuned lyre, while the lyre itself and its strings are corporeal bodies and composite and earthy ... [S]omething of this sort is what we actually take the soul to be: our body is kept in tension as it were, and held together by hot and cold, dry and wet, and the like, and our soul is a blending and attunement of these same things, when they’re blended with each other in due proportion.³

The harmonists imagine a musical soul: as harmony to wood and strings, so soul to body. The harmony, or attunement, is a certain arrangement, but not just any arrangement – not, for example, the arrangement possessed by the parts of a smashed lyre. The harmony is a correct arrangement, one that is present when the elements are mixed rightly, ‘in due proportion’. How are we to spell out this notion of correctness? Perhaps in terms of what the lyre is able to *do*: correctness is ‘aptitude for performance’, as Jonathan Barnes suggests.⁴ Harmony is an arrangement that gives rise to a capacity to do something: the attuned lyre will produce music in certain circumstances. Harmony, viewed this way, is not music, and not just arrangement, but arrangement that yields a capacity for music. If soul is like harmony, then to have a soul is likewise to be able to do something; to be in some psychological state is to be in a state that tends to do something.

Thus understood, the harmonists are *functionalist* philosophers, if we take functionalists to be those who define a mental state in terms of its causal role, saying that a mental state is defined by a set of conditions that specify its typical causes and typical effects under a range of different circumstances.⁵ The lyre’s harmony will be defined by its capacity to produce certain musical effects (given certain striking of the lyre); pain will be defined in part by its capacity to produce beliefs that one is in pain (given certain perceptions of pain), desires to avoid the cause of pain, and behaviour directed towards pain-avoidance. Souls, psychological states, are what they are in virtue of what they do.

Perhaps there is ‘something sound’ in these suggestions, then – something sound by contemporary lights, and something sound even by Aristotle’s lights. The musical soul is the soul according to functionalism and, perhaps, the soul according to Aristotle. Some reservations must be expressed, to avoid anachronism. The contemporary functionalist will speak of mind rather than soul, the scope

‘soul’ for the ancients being more generous than the scope of ‘mind’ nowadays: soul animates every living thing, whether animal or vegetable, for Aristotle. But thought is a function of life for creatures like ourselves, so ancient theories of soul and contemporary theories of mind will overlap. Aristotle talks about soul in ways that make the musical analogy, appropriate to ancient harmony theory and to contemporary functionalism alike, seem appropriate to his account as well. Soul seems to be functional organisation. Soul is form, which is to be understood in terms of function: we have a soul when we have certain capacities, the capacities to nourish ourselves, move, perceive, and think. He says, memorably, that if the eye were an animal, sight would be its soul: soul is to the animal as sight is to the eye (412b 18–19). He suggests in the same passage that if an axe were an animal, its soul would be the capacity to cut. Might he not just as well have said that if the lyre were an animal, harmony would be its soul? He seems willing to draw the harmonist’s analogy between artefacts and living creatures. An artefact is defined by what it does: a house can give shelter against destruction by wind, rain and heat (403b 5). That is what it is to be a house. Similarly, anger is defined by what it does: it is a desire for revenge, an appetite for returning pain for pain, a motive for retaliation (403a 30–1). That is what it is to be anger – or at least that is what it is to be anger according to the definition of the ‘dialectician’.

Many commentators, drawing upon such texts, have said Aristotle is a functionalist philosopher of soul. Aristotle and the functionalists are thought to chart a common course, avoiding the twin perils of dualism and reductive materialism. ‘The right view’ steers clear of both, holding that the soul ‘cannot be without a body, while it cannot *be* a body: it is not a body, but something relative to a body’ (414a 19–21).⁶ Hilary Putnam claims inspiration from Aristotle in an early paper championing the functionalist programme: ‘what we are really interested in, as Aristotle saw, is form and not matter.’ Martha Nussbaum and Richard Sorabji have offered a detailed functionalist interpretation of Aristotle, and others have joined them.⁷ In the remainder of this section I sketch this sort of interpretation, drawing attention to some apparent common ground between Aristotle and functionalists, ancient and modern. Later I shall consider two arguments against it, and endorse one of them – so this essay defends the functionalist interpretation from one argument, but leaves it vulnerable to another.

Functionalism avoids the perils of dualism and materialism through silence, not through enmity. When it defines mental states in terms of functional roles, functionalism at its most basic says nothing about what realises those roles. Basic functionalism is not materialism, it is not dualism, but it is compatible with either. The functional roles could be realised by anything from Swiss cheese to Cartesian mind-stuff, just so long as the stuff can do the work. Basic functionalism is compatible with almost any metaphysics, whether idealist, dualist or materialist.⁸ Its hands-off attitude is expressed by David Lewis, who says (confining his attention to experience) that the functionalist account ‘is neutral between theories – or lack of any theory – about what sort of real and efficacious things experiences are: neural states or the like, pulsations of ectoplasm or the like, or just experiences and nothing else’.⁹ From the perspective of functionalism, says Putnam, ‘the question of matter or soul stuff is really irrelevant to any question of philosophical ... significance’.¹⁰ Mental states are defined by their causal roles, and basic functionalism says no more than this.

But the harmony theorists do say more than this. They say that the lyre itself and its strings are ‘corporeal bodies’; and they say that our own bodies are put together from material elements, ‘the hot and cold, the dry and wet’. In addition to giving an account of the soul in functional terms, the harmonist

offer an account of what in fact fulfils those functions. The soul is a harmony of a *body*. The harmony theory wedds basic functionalism to physicalism.

Physicalistic functionalism goes beyond basic functionalism to a second stage: it offers an account of what, in fact, fulfils the functional roles definitive of mental states. Matter, and not Cartesian mind-stuff, does the work. The causal roles which belong by definition to certain mental states belong in fact to certain physical states.¹¹ It might be matter of quite different sorts in different sorts of beings, and here the lyre analogy is helpful once again. The same harmony might be achieved in different physical ways: in wood and string, or clay and wire. And if soul is like harmony, the same state of soul might be achieved in different physical ways: the harmony theory allows for multiple realisability of psychological states in different physical states. In addition, harmony supervenes on the wood and the strings: there could be no difference in the harmony without a difference in the tension or arrangement of the components. And if soul is like harmony, soul supervenes on body: there could be no difference in psychological states without a difference in physical states.¹² But notwithstanding the supervenience dependence of harmony on matter, our grasp of harmony may have a kind of explanatory autonomy: the one who best understands music may not be the one who best understands wood and string. And if soul is like harmony, our grasp of mind may likewise have a kind of explanatory autonomy: the best psychologist may not be the one who best understands the nature of flesh and bone.

Here again, perhaps there is 'something sound' in these suggestions – something sound by contemporary lights, and something sound by Aristotle's lights too. Those commentators who find Aristotle to be a functionalist typically find him to be more than a basic functionalist. For Aristotle says that the soul is the form *of the body*. He adds to the functional definition of states of soul an account of what realises those states. Soul is related to body as form to matter. We can dismiss as unnecessary the question whether the soul and the body are one: 'it is as though we were to ask whether the wax and its shape are one, or generally the matter of a thing and that of which it is the matter' (412b 6–9). A house is not simply a shelter against destruction by wind, rain and heat; it is also what the physicist describes, namely 'stones, bricks and timbers' (403b 6). Anger is not simply the desire for revenge, the motive for retaliation: it is also what the physicist describes, namely the 'boiling of the blood or warm substance surrounding the heart' (403a 31–403b 1). The dialectician's definition is to be supplemented by what the physicist says. It is tempting to see Aristotle as pursuing the two-stage strategy of the physicalist functionalist, first identifying states of soul with certain functional roles, in the manner of the basic functionalist, and then introducing matter as the realiser of those roles. The causal roles which belong by definition to certain mental states belong in fact to certain physical states: the causal role which belongs by definition to anger belongs in fact to the boiling of blood around the heart.

There is reason for supposing that Aristotle accepted multiple realisability: that he thought the capacities of the soul could be realised in different ways, just as the lyre analogy suggests. As the same harmony may exist in different sorts of musical instruments, so the same states of soul may exist in quite different sorts of matter. The analogies drawn by Aristotle himself – the shape of the wax, the sheltering ability of a house – suggest forms which can be instantiated in a variety of different things. And his explicit remarks on the capacities of the soul are in keeping with this. The capacity of absorbing food, one of the functions of living, animate things – is realised by roots in plants, and by mouths in animals (412b 2–3). The perceptual capacity of smell is realised in fish quite differently to the way it is realised

ourselves, since in us it involves breathing, but not in fish (421b 9–422a 6).

There is reason for supposing that Aristotle thought the capacities of the soul supervene on states of the body. Whether a house is a good shelter will depend on its bricks and stone; and there could be no difference in the sheltering ability without a difference in the bricks and stones. With the soul it seems to be likewise, at least for many of its states. 'It seems that all the affections of soul involve a bodily passion, gentleness, fear, pity, courage, joy, loving, and hating; in all these there is a concurrent affection of the body' (403a 16). For anger, this 'concurrent affection of the body' is the blood boiling around the heart, and the suggestion seems to be that there would be no difference in the facts about anger without a difference in the facts about boiling blood. In support of his conclusion about the 'involvement' of body Aristotle cites cases of fear and anger occurring in atypical circumstances.

[W]hile sometimes on the occasion of violent and striking occurrences there is no excitement or fear felt, on others faint and feeble stimulations produce these emotions, viz. when the body is already in a state of tension resembling its condition when we are angry. Here is a still clearer case: in the absence of any external cause of terror we find ourselves experiencing the feelings of a man in terror.

(403a 19–20)

The examples show what he takes this 'involvement' of body to be. In the first case, despite a typical cause for fear, no fear is felt, because of the absence of the relevant bodily state: a relevant bodily state is a necessary condition for fear. In the second case, an emotion is felt despite the absence of a fully appropriate cause, because of the presence of a relevant bodily state. In the third case (a 'clearer case') terror is felt despite the absence of any typical cause for it, because of the presence of a relevant bodily state. A necessary condition for fear is that there be some appropriate bodily state or other; and the presence of such a bodily state will be sufficient for the fear. Case one suggests the necessity condition, cases two and (more clearly) three, suggest a sufficiency condition. All this suggests that fear supervenes on its material basis, and anger supervenes on the blood boiling around the heart.¹³ Aristotle concludes the passage with an important summary of his view: 'From all this it is obvious that the affections of soul are enmattered accounts' (403b 24–5). The notion of an 'enmattered account' (*logos enhulos*) can be understood as the notion of a functionally defined mental state realised in, and supervening upon, states of matter.

Notwithstanding the supervenient dependence of soul on body, our explanation of the soul's capacities may have a kind of autonomy, just as an explanation of a lyre's distinctive musical capacities may be quite separate from an explanation of what happens to the lyre's wood and string. This explanatory autonomy is part of what Putnam had in mind when he hailed Aristotle as his philosophical forebear.

Whatever our mental functioning may be, there seems to be no serious reason to believe that it is *explainable by* our physics and chemistry.

No physical explanation will succeed in having the simplicity and generality that we need for psychology, but a functional explanation will. Putnam says this points to the autonomy of the mental.

My conclusion is that we have what we always wanted – an autonomous mental life. And we need no mysteries, no ghostly agents, no *élan vital* to have it.¹⁴

Nussbaum and Putnam find just this explanatory autonomy in Aristotle, who thinks explanations in terms of soul are superior to explanations in terms of matter.

[I]nasmuch as it is the presence of the soul that enables matter to constitute the animal nature, much more than it is the presence of matter which so enables the soul, the inquirer into nature is bound to treat of the soul rather than of the matter.

(*Parts of Animals*, 641a 28–30)

On this vision of Aristotle there is considerable common ground between Aristotle's views on the soul and the views of his harmonist predecessors and functionalist successors.¹⁵ All are musicians of the soul, all give a theory of the soul which is perfectly capturable by the harmonist's musical analogy, according to which the soul and its states are like the harmony of a lyre – functionally defined, multiply realisable, supervenient on body, yet autonomous when it comes to the business of explanation. Given Aristotle's avowed purpose of profiting by what is sound in the suggestions of his predecessors, together with the apparent soundness of the harmonist's account of soul by his own lights, one might expect Aristotle to give the harmony theory a charitable reception. But no. The view is 'absurd' (408a 1, a 14), 'easily refutable' (408a 12). Aristotle's dismissiveness is puzzling; and if the harmonists are rightly interpreted as functionalists, that dismissiveness should also be puzzling to Aristotle's functionalist interpreters. Aristotle's evaluation of the harmony theory will be an evaluation of functionalism, and one that should provoke unease. If Aristotle views the harmonists as 'absurd', is there not some danger that he would view his functionalist interpreters likewise?

His stated reasons for finding the view absurd are not entirely satisfying. One reason is that if the soul is a harmony, there will be many souls distributed throughout the body, since there are many different harmonious arrangements (408a 16–19). This is hardly an objection: the claim was not that every harmony is a soul, but that the soul is a *kind* of harmony.¹⁶ Another reason is more important, and has to do with a question about the metaphysics of causation: a harmony lacks 'the power of originating movement', a power which everyone agrees belongs to the soul (407b 34–5). The harmony of the lyre fails to be a cause in the way that the soul is a cause. Some commentators have pointed to the special role assigned to the soul in actively holding the body together, in Aristotle's philosophy, a role which has no parallel in the lyre.¹⁷ Others have argued that Aristotle is an emergentist about the powers of the soul, that Aristotle believes states of soul have efficacy in virtue of being states of soul. I will not be addressing here these issues in the metaphysics of causation, despite their possible significance.¹⁸ But there may be other reasons for thinking Aristotle would find uncongenial the functionalist's account, whether ancient or modern, and hence other reasons for thinking that the soul he imagines is not, or not quite, the musical soul.

Two such reasons are considered in the remainder of the paper: one deals in magic, and I shall argue (in the next section) that it is unpersuasive; the other deals in mathematics, and I shall argue (in the final section) that it is persuasive. A powerful objection has been raised by Myles Burnyeat, who says that functionalism is reductive and materialistic, too materialistic for Aristotle; he attributes to Aristotle a magical soul quite different to the soul attributed by the functionalist. There are grounds for thinking Burnyeat is wrong in his interpretation, but even if he is right, his argument is unpersuasive because it does not fully meet its functionalist target. Contrary to Burnyeat, a magical soul could be the soul of the

functionalist. The final section raises an argument about mathematics, or rather about the methodology of mathematics, as Aristotle sees it, which brings a problem for functionalism that looks the opposite of Burnyeat's: the trouble is not that functionalism takes matter too seriously, from Aristotle's point of view but that it doesn't take matter seriously enough. The functionalist attributes to Aristotle an abstract conception of the soul. The musical soul is also a mathematical soul – a soul treated as if it were an object of mathematics, definable independently of matter. Although this abstract conception can seem congenial to Aristotle, there is a persuasive case for thinking Aristotle would reject it, given the difference he sees between the study of soul and the study of mathematics. Contrary to the functionalist, the mathematical soul could not be the soul of Aristotle.

The magical soul

According to Burnyeat, Aristotle's view is mysterious and alien, he says – 'magical' seems just the word for it, and it has been aptly used by others.¹⁹ That magic is evident in Aristotle's account of vision according to Aristotle, when I see, nothing happens in the matter of my eye, says Burnyeat. If he were right, what would become of the musical soul? Imagine a lyre that produces beautiful music, though nothing happens to the wood and strings. That magical lyre would be no familiar physical lyre. Perhaps it could still be defined functionally, defined in terms of what it does; but the physical story would be gone. If Burnyeat were right, the musical analogy would need to be abandoned, or at least revised. The magical soul would at least partly displace the musical.

In what follows I want to consider Burnyeat's argument, but some disclaimers are in order. Confronted with a clash of scholarly giants, the hopes of a bystander will be modest. Ambitions will tend to the philosophical, rather than the textual. One can hope, perhaps, for the role of a spectator at Wimbledon, innocent of ability to play – but able none the less to form her own opinion about whether a player has, at any rate, returned his opponent's serve. I will be suggesting that Burnyeat's argument is weaker than he thinks: if his argument is quite sound, Aristotle may still be a functionalist; and if, as seems, it is partly mistaken, Aristotle may even be a physicalistic functionalist.

Burnyeat says that Aristotle's philosophy of mind is no longer credible, contrary to his functionalist interpreters, because Aristotle's philosophy of matter is no longer credible. Among the features of the functionalist view that Burnyeat opposes are the twin claims of multiple realizability and supervenience. This is enough to show that Burnyeat is not addressing basic functionalism – which says nothing about what mental states are realised in or supervene on – but physicalistic functionalism. He addresses multiple realizability, the thesis that psychological states, construed as functional states, 'must be realised in some material or physical set-up, but it is not essential that the set-up should be the flesh and bone and nervous system of *Homo sapiens* rather than the electronic gadgetry of a computer'. And he addresses the supervenience of the mental on the physical, the thesis that 'in any two worlds where the physical facts are the same, the mental facts are the same'.²⁰ Burnyeat's magical Aristotle denies both theses.

Aristotle denies multiple realizability, according to Burnyeat, because he denies that the relation between animal bodies and their functions is a contingent one. According to what is sometimes called the *homonymy principle*, the eye which cannot see is an eye in name only, not really an eye at all. The principle applies as much to the matter of living things as to the living things themselves. 'Life and

perceptual awareness are not something contingently added to animal bodies in the way in which shape is contingently added to the bronze to make a statue'.²¹ On this understanding of Aristotle's conception of living bodies, it makes no sense to think of matter plus some functional ability – for example, eye-jelly plus sight. When it comes to living, animate things, Aristotle's 'matter' is, of necessity, functionally organised. The bodies that are in fact ensouled are also of necessity ensouled. On this understanding of Aristotle's homonymy principle, the functional roles provide the identity conditions for the physical states: without the sight, there is no eye, nor even an eye-jelly; without the soul, there is no body; without functioning life, there is no flesh.

[T]here is no such thing as face or flesh without soul in it; it is only homonymously that they will be called face or flesh if the life has gone out of them, just as if they had been made of stone or wood.

(*Generation of Animals*, 734b 24–c)

If Aristotle had believed that the firing of C-fibres realised the functionally defined mental state of pain, then on the homonymy principle he would think that C-fibres could not exist except in the brain of a living creature capable of pain. Should the creature die, the C-fibres would cease to exist (except homonymously). Burnyeat takes this to be a mysterious and alien conception of matter, a conception of matter as essentially capable of awareness. But whether or not the conception is really so mysterious, his basic argument is that Aristotle's matter theory requires a necessary relation between matter and form: multiple realisability requires a contingent relation. Burnyeat concludes that functionalism is incompatible with Aristotle's philosophy of matter.

Aristotle denies supervenience, according to Burnyeat, because he thinks that differences in states of soul can occur without differences in states of body: in particular, visual awareness occurs without any difference in the matter of the eye-jelly. This violates supervenience, according to which there can be no difference in the facts about mental states without a difference in the facts about physical states. Since functionalism is committed to the supervenience of the mental on the physical, functionalist interpretations of Aristotle are, he says, mistaken. Burnyeat addresses the Aristotelian doctrine that in perception the eye takes on form without matter, arguing that Aristotle means that the eye takes on the form of a colour without any difference in its own matter. Sorabji had argued that for the eye to take on form without matter is for the eye jelly to become coloured, but without receiving matter from the object of vision.²² On Sorabji's view, the eye literally becomes red when we see something red. On Burnyeat's it does not become red, and indeed does not *become* anything at all – except aware. On Burnyeat's interpretation, there is no physical story to the process of vision, the process in which the capacity of sight is exercised. Again, the mystery, according to Burnyeat, is in Aristotle's deeply alien conception of matter as 'pregnant with consciousness', the eye pregnant with visual awareness, needing no physiological change, nothing more than confrontation with the visible, in order to see.

The first thing to say about these two arguments is that they seem to be independent of each other, though Burnyeat does not present them that way. On the contrary, he suggests that 'the details of the theory of perception', given in the account of what goes on in the eye, are part of that same 'alien conception of the physical' which is a consequence of homonymy.²³ The suggestion is that the two are interconnected, and in particular that homonymy undermines supervenience as well as multiple realisability. But the issues of homonymy and supervenience seem independent. One could consistently

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