

Myths of the Mind and Myths of the Brain

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In the history of philosophy there have been two recurrent contrasting conceptions of what it is to be human. One we may call Aristotelian and the other Cartesian. (Both can trace their ancestry to the polymorphous Plato). According to Aristotle, a human being is an animal of a particular kind: a rational animal. According to Descartes a human person is a spirit of a particular kind, temporarily and mysteriously united to a body. I accept the Aristotelian account and regard the Cartesian account as fundamentally mistaken.

In sceptical vein, Descartes believed that he could doubt the existence of the external world and the existence of his own body. He brought his doubt to an end with the famous argument “*cogito, ergo sum* – I think, therefore I am.” This led to the question “What am I?” Descartes’ answer was that he was a substance whose whole essence or nature was to think, and whose being required no place and depended on no material thing. He was an immortal mind, linked to a mortal body which was a particularly elaborate machine.

To Descartes’ question my own, Aristotelian, answer is that I am a human being, a living body of a certain kind. We sometimes speak as if we have bodies, rather than are bodies. But having a body, in this natural sense, is not incompatible with being a body; it does not mean that there is something other than my body that *has* my body. Just as my body has a head, a trunk, two arms and two legs, but is not something over and above the head, trunk, arms, and legs, so I have a body but am not something over and above the body.

As well as a body, I have a mind: that is to say I have various psychological capacities, including especially an intellect and a will. The intellect is the capacity to acquire and exercise intellectual abilities of various kinds, such as the mastery of language and the possession of objective information. The will is the capacity for the free pursuit of goals formulated by the intellect. Intellect and will are not themselves independent en-

tities: they are capacities. What are they capacities of? Of the living human being, the bodily person that you see before you.

All of you too have minds and bodies, and so do all human beings: that is to say we are all bodies that have certain mental capacities. The intellect and the will are peculiar to human beings, but there are other faculties – the ability to see and hear, for instance, and the capacity for pleasure and pain – that we share with other animals. Descartes believed that only human beings were conscious and that other animals were machines lacking consciousness; but Descartes was wrong.

What is peculiar to our species is the capacity for thought and behaviour of the complicated and symbolic kinds that constitute the linguistic, social, moral, economic, scientific, cultural and other characteristic activities of human beings in society. The mind is a capacity, not an activity: it is the capacity to acquire intellectual abilities of which the most important is the mastery of language. The will, in contrast with animal desire, is the capacity to pursue goals that only language-users can formulate. The study of the acquisition and exercise of language is the way *par excellence* to study the nature of the human mind.

It is because Descartes did not take this fact seriously that his philosophy of mind fell into error. When he tried to doubt everything, the one thing he did not call into question was the meaning of the words he was using in his solitary meditation. Had he done so, he would have had to realise that even the words we use in soliloquy derive their meaning from the social community which is the home of our language, and that therefore it was not, in fact, possible to build up his philosophy from solitary private ideas.

But many who are officially anti-Cartesian retain the fundamental dualist error that the contents of our minds are accessible to private introspection without reference to the public and social institutions in which our language is embedded.

According to the dualist the relation between mental processes and their expression in behaviour is a contingent relation; it is not any sort of logical necessity. Mind and body are separate; each of them could in principle live its life independent of the other. At the opposite pole from dualism is behaviourism: the theory that all ascriptions of mental attributes to human beings, if they are not to be mere myth-making, must be reducible to ascriptions of bodily behaviour. Behaviorism is an error no less than dualism. Bodily behaviour is not identical with mental life, but only evidence for it; but this evidential relation is one which is built into the meaning of the mental predicates by which we describe the life of human beings.

Following Wittgenstein we may make a distinction between two kinds of evidence that we may have for the obtaining of states of affairs, namely *symptoms* and *criteria*. Where the connection between a certain kind of evidence and the conclusion drawn from it is a matter of empirical discovery, the evidence may be called a *symptom* of the state of affairs; where the relation between evidence and conclusion is not something discovered by empirical investigation, but is something that must be grasped by anyone who possesses the concept of the state of affairs in question, then the evidence is not a mere symptom, but a *criterion* of the event in question. A red sky at night may be a symptom of good weather the following morning, but the absence of clouds, the shining of the sun etc. tomorrow morning are not just symptoms but criteria for the good weather. Similarly, scratching is a criterion for itching, and singing "Adeste Fideles" from memory is a criterion for knowing it – though of course not everyone who itches scratches, and one can know the hymn for years and years without ever actually singing it.

The notion of *criterion* enables us to steer between the Scylla of dualism and the Charybdis of behaviorism. We can agree with dualists that particular mental events can occur without accompanying bodily behaviour; on the other hand we can agree with behaviourists that the possibility of ascribing mental acts to people depends on such acts having, in general, a behavioural expression. In fact, the conflict between dualism and behaviorism appears to be a matter of the past. Few psychologist would nowadays uphold the classical behaviorism of Skinner and almost every contemporary writer, whether philosopher or physiologist, begins his discussion of the human mind with a renunciation of the dualism of Descartes.

But it would be wrong to think that we have achieved clarity on the relevant issues. There continues to be a battle between the partisans of the spirit and the partisans of matter, but it has moved onto a different terrain. Much scientific and philosophical energy is currently devoted to studying the relationship between the mind and the brain. Many neuroscientists, psychologists and philosophers champion a programme of cognitive science whose goal is to amalgamate the philosophy of mind with the scientific investigation of the brain. Cognitive science, it is held, will superannate and carefully the pretensions of cognitive science to have superannated philosophical psychology. But in fact the writings of some of the most prominent proponents of the new discipline are themselves infected with philosophical confusion. Many of those engaged in the study subscribe either to a mythical account of the mind or to a

mythical account of the brain, or to two myths simultaneously. The one myth is the myth of consciousness, the other myth is the myth of the homunculus. I will treat of each of these myths in turn.

First, the myth of consciousness. Is, of course, an undoubted fact that human beings – along with other animals, possess consciousness. That is to say, humans see and hear and feel and in general, through their senses, acquire information about the world around them. The myth of consciousness is the idea that consciousness is something private to the individual, an object of introspection, something we can see when we look within ourselves, something to which we have ourselves direct access, but which others can learn of only indirectly, through accepting our verbal testimony or making causal inferences from our behaviour.

Consciousness is sometimes thought of as a feature which is common to every item in our mental history – to sense-perception, sensation, emotion and feeling of every kind. It is often portrayed as a form of inner awareness, or a qualitative feel; and it is maintained that it is in virtue of this common feature that such things as seeing and hearing can be called conscious operations or activities. But in fact there is no such common feature there isn't any felt element that is common to seeing a green patch, hearing an oboe, and tasting garlic. Belief in this mythical form of consciousness is a survival, in thinkers who officially reject dualism, of the Cartesian notion of thought. The difference between genuine consciousness and Cartesian consciousness is easily brought out: for Descartes dreams were accompanied by consciousness, whereas of course dreams occur only after we have lost consciousness in the non-mythical sense.

Those who subscribe to the myth of consciousness think of the mind as a ghostly medium or locus of mental events and processes that is accessible only by introspection. The mythology, it must be admitted, is one that we are all prone to accept. We imagine a mechanism in our minds, a non-physical mechanism that works in a mysterious medium. There is a temptation to think, for instance, that when you recognize somebody what you do is to consult a mental picture of her and check whether what you now see matches the picture. Reflection on this idea can able us to see that it is nonsense, and that it in no way explains recognition. If we suppose the process to happen in the real world, with a physical and not just a mental picture, our initial problem just returns. How do we recognize that this is a picture of a particular person in order to use it to recognize her? The only thing that gave the illusion of explanation in this case was the fuzzy nature of the original supposition: the

fact that the process was supposed to take place in the ghostly medium of the mind.

Many philosophers and psychologists believe that the task of a scientific theory of the mind, is to establish a principle of correlation between the occurrence of mental states and processes and the occurrence of states and processes in the brain. This correlation would only be a possibility if mental events (e.g. thoughts, or flashes of understanding) were themselves measurable in the way in which physical events are measurable. But thought and understanding are not processes in a psychic medium in the way in which electrolysis and oxidization are processes in a physical medium. Thought and understanding are not processes at all. The criteria by which we decide whether someone understands a sentence, for instance, are quite different from the criteria by which we decide what mental processes are going on while he is uttering or writing the sentence.

Those who think of the mind as a ghostly medium, and thought and understanding as processes occurring there, regard the medium as accessible by introspection, and only by introspection. The mind, on this view, is an inner space that deserves exploration at least as much as outer space. But whereas – given enough time, money, and energy – everyone can explore the same outer space, each of us can only explore our own inner space. We do so by looking within at something to which we ourselves have direct access, but which others can learn of only indirectly, by accepting or verbal testimony or making inferences from our physical behaviour. The connection between consciousness on the one hand, and speech and behaviour on the other, is on this view a purely contingent one.

However, if the connection between consciousness and expression is merely contingent, then for all we know everything in the universe may be conscious. It is perfectly consistent with the idea that consciousness is something private, with which we make contact only in our own case, that the podium from which I am lecturing may be conscious. For all we know, may it not be in excruciating pain? Of course, if it is, we have to add the hypothesis that it is also exhibiting stoical fortitude. But why not?

If consciousness really is merely contingently connected with its expression in behaviour, can we be confident in our ascription of it to other human beings? Our only evidence that human beings are conscious is that each of us, if he looks within *himself* sees consciousness *there*. But how can a man generalise his own case so irresponsibly? He cannot look within others: it is the essence of introspection that it should be something that we all have to do for ourselves. Nor can he make a causal de-

duction from other people's behaviour. A correlation between other people's consciousness and their behaviour could never be established when the first term of the correlation is in principle unobservable.

If there is to be a scientific investigation of the relationship between the mind and the brain, the items to be correlated at the mental end are not events in the mythical medium of consciousness, but the events in the public world that provide the criteria by which we ascribe genuine perception, sensation, thought, and intelligence to human beings. Any discovery of links between mind and brain must start from the everyday concepts we use in describing the mind, concepts which are grafted on to behavioural criteria. And preliminary to the psychological and physiological investigation of the criterial events there must be a sound philosophical analysis of the relation between such events and the mental items for which they provide evidence. Those who scorn our ordinary concepts of thought, intention, and reasons as relics of a folk psychology are engaged in sawing off the branches on which any scientist exploring the neurological basis of the mind must have to sit.

I turn from the myth of the mind to the myth of the brain.

One of the most ubiquitous misunderstandings of the nature of the mind is the picture of mind's relation to body as that between a little person or homunculus on the one hand, and a tool or instrument or machine on the other. We smile when medieval painters represent the death of the Virgin Mary by showing a small scale-model virgin emerging from her mouth: but basically the same idea can be found in the most unlikely places, including the writings of cognitive scientists.

Descartes, when first he reported the occurrence of retinal images, warned us not to be misled by the resemblance between images and their objects into thinking that when we saw the object we had another pair of eyes, inside our brain, to see the images. But he himself believed that seeing was to be explained by saying that the soul encountered an image in the pineal gland. This was a particularly striking version of what has been nicknamed "the homunculus fallacy" – the attempt to explain human experience and behaviour by postulating a little human within an ordinary human.

What is wrong with the homunculus fallacy? In itself there is nothing misguided in speaking of images in the brain, if one means patterns in the brain, observable to a neurophysiologist, that can be mapped onto features of the visible environment. What is misleading is to take these mappings as representations, to regard them as visible to the mind, and to say that seeing consists in the mind's perception of these images.

The misleading aspect is that such an account pretends to explain seeing, but the explanation reproduces exactly the puzzling features it was supposed to explain. For it is only if we think of the relation between a mind and an image in the pineal gland as being just like the relation between a human being and pictures seen in the environment that we will think that talk of an encounter between the mind and the image has any illuminating power at all. But whatever needs explaining in the human turns up grinning and unexplained in the shape of the manikin.

At the present time, when energetic efforts are being made to construct a new cognitive science of the mind, it is the brain, or parts of the brain, that are usually assigned the role of the homunculus. We may be told that our brains ask questions, solve problems, decode signals, and construct hypotheses. Those who ascribe human capabilities to parts of human beings are unmindful of Wittgenstein's warning "Only of a human being and what resembles (behaves like) a human being can one say: it has sensations; it sees; is blind; hears; is deaf; is conscious or unconscious." (Wittgenstein 1953) But the same point had been made millennia ago by Aristotle, who wrote "To say that the soul gets angry is as if one were to say that the soul weaves or builds a house. Probably it is better not to say that the soul pities, or learns, or thinks, but that the human being does these things with its soul." (*De Anima*, 408b12-15) By ignoring these warnings many cognitive scientists manage to combine the errors of dualism with those of materialism.

How, then, should the relationship between the mind and the brain be conceived? To clarify the issue we should recall that the mind is a capacity (a second-order ability) and that capacities are distinct both from their possessors and their exercises. The possessor of an ability is what *has* the ability: I am the possessor of my linguistic skills; it is I (and not my mind or my brain) who knows language and is exercising that ability in giving this lecture. But we need to introduce a further notion: that of the vehicle of an ability. Not only humans have abilities: my car has the ability to decelerate; it can reduce speed in answer to my touch on the foot brake. But this ability has a vehicle: the *vehicle* of the car's ability to decelerate is the brake mechanism. The vehicle of an ability is that part or feature in virtue of which the possessor of an ability is able to exercise it. A vehicle is something concrete and more or less tangible; an ability, on the other hand, has neither length nor breadth nor location. It is, if you like, an abstraction from behaviour or performance.

We can apply this distinction between possessors, abilities and vehicles to the relation between people, their minds, and their brains. Human be-

ings, as we have said, are living bodies of a certain kind who possess various abilities, most notably intellectual abilities. The vehicle of the human mind is the human brain (plus other parts of the nervous system.)

In every age philosophers have been tempted to blur the distinctions between powers and their exercises and their vehicles. There is a perennial tendency to reduce potentialities to actualities. There are two kinds of reductionism: one reduces abilities to their exercises, the other reduces abilities to their vehicles. Hume, who said that the distinction between a power and its exercise was frivolous, was an exercise-reductionist. Descartes, who identified the powers of bodies with their geometrical properties, was a vehicle-reductionist.

Philosophical errors about capacities show up particularly vividly when they occur in the philosophy of mind. Applied in this area, exercise-reductionism is behaviorism: the attempt to identify mind with its particular exercises in behaviour. Applied in this area, vehicle-reductionism becomes materialism: the reduction of our mental capacities to the parts and structures of our bodies in virtue of which we possess them, and in particular to our brains. The identification of mind and brain is a category mistake, because the brain is a material object and the mind is a capacity. The mind is the capacity to acquire intellectual abilities. The possessor of human mental capacities is neither the mind nor the brain but the human being.

Sometimes cognitive scientists write as if the relation between mind and brain was that the mind made inferences from events in the brain and nervous system. This is a form of the homunculus fallacy, and it was explicitly rejected by Wittgenstein. "An event leaves a trace in the memory: one sometimes imagines this as if it consisted in the event's having left a tract, an impression, a consequence in the nervous system. As if one could say: the nerves too have a memory. But then when someone remembered an event, he would have to infer it from this impression, this trace. Whatever the event does leave behind in the organism, *it* isn't the memory." (Wittgenstein 1980: I, 220) When something is recorded on a tape, the alteration in the tape is not a memory, and when the tape is played it is not remembering.

Not all cognitive scientists go so far as explicitly to identify the mind with the brain, but all seek a parallelism between mental and physical events. Wittgenstein rejected this. "Nothing seems more possible to me" he wrote "than that people some day will come to the definite opinion that there is no copy in either the physiological or the nervous systems which corresponds to a particular thought, or a particular idea, or mem-

ory.” (Wittgenstein 1982: I, 504) The history of the mind is not a history of events in the way that the history of the body is. A thought does not have temporal parts as the utterance of a sentence does. Of course, there are such things as mental events and processes – hitting on an idea, or reciting a nursery rhyme in the imagination – but such events and processes are what they are because of the abilities from which they issue and which provide their background.

In conclusion, we may pose a fundamental question Is it the case that every mental ability does have a physical vehicle? Wittgenstein called this in question.

No supposition seems to me more natural than that there is no process in the brain correlated with associating or with thinking; so that it would be impossible to read off thought processes from brain processes... It is perfectly possible that certain psychological phenomena *cannot* be investigated physiologically, because physiologically nothing corresponds to them. I saw this man years ago: now I have seen him again, I recognize him, I remember his name. And why does there have to be a cause of this remembering in my nervous system?... Why should there not be a psychological regularity to which *no* physiological regularity corresponds? (Wittgenstein 1967: 608-10; cf. Wittgenstein 1980: 903-6)

So Wittgenstein is willing to countenance a case of a causality between psychological phenomena unmediated physiologically. He is anxious to say that this does not amount to the “admission of the existence of a soul *alongside* the body, a ghostly, spiritual nature.” (Wittgenstein 1980: 906) The entity that does the associating, thinking, and remembering is not a spiritual substance, à la Plato and Descartes, but a corporeal human being. But this passage seems to envisage the possibility of an Aristotelian soul or entelechy, which operates with no material vehicle, a formal and final cause to which there corresponds no mechanistic efficient cause. I must confess that, like many of Wittgenstein’s critics, I find this suggestion flies in the face of my understanding of causality. But who am I to challenge Wittgenstein’s immediately following remark “If this upsets our concept of causality then it is high time it was upset.” (Wittgenstein 1967: 610)

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