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## I think, but who am I?

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WE BELIEVE we are radically different from other animals. We have ethical ideals. We engage in philosophical inquiry. We have developed a rapidly expanding body of scientific knowledge. No other animal displays these capacities.

Yet the implication of recent scientific research is that the differences between ourselves and other animals are much more subtle and complex than we think. What we take to be our most valuable achievements may actually depend on illusions - false or distorted views of the world and ourselves that are built into our natural ways of thinking and perceiving.

We believe we are conscious agents capable of directing our lives. Science shows this to be a radically oversimplified view. So, too, does the best philosophy. David Hume, looking within himself, declared he found no enduring identity, only "a bundle of sensations". Hume was aware that most people believe they have solid and enduring identities. Equally, he knew that most philosophers endorsed this common belief. Yet he asserted that human beings are "nothing but a collection of perceptions which succeed each other with inconceivable rapidity and are in perpetual flux and movement".

Hume's analysis implies that our sense of ourselves as continuous, coherent individuals is an illusion. Worse, Hume believed, this is a natural illusion. We have an inbuilt tendency to see ourselves as other than we actually are. For the majority of philosophers, this is heresy. Ever since Socrates, philosophers have aspired to a life based solely on true beliefs. Yet recent research suggests we are programmed to live on illusions.

The late Francisco Varela, one of the founders of cognitive science, has given Hume's sceptical view of the self a rigorous theoretical underpinning. For Varela, the continuities in our behaviour are not the expression of a "self". They are more like the patterns of activity that can be observed in insect colonies, where the separate components of the colony coordinate their activities without the help of any conscious agent. Varela cites an experiment in which the most efficient

nurses in an insect colony were removed to form a sub-colony. The results were illuminating. Outside the main colony, the insect nurses foraged more and nursed less. Within the main colony, formerly low-level nurses increased their nursing activities. When the efficient nurses were returned to the main colony, they resumed their previous activities.

The upshot of this experiment is that, even though insect colonies do not have a conscious self, they have memory and can renew themselves. Varela suggested that each of us is like an insect colony. Our lives hang together, but not because we are directing and controlling them. The self - the stable, continuous subject we believe ourselves to be - is a mirage.

Varela's scientific studies corroborate the intuitions of a supremely accomplished philosopher, but most philosophers appear to be unaware of the findings of cognitive science. This indifference to neuroscientific research is nothing new. Ever since the early days of neuroscience, it has been clear that perception is an extremely complex activity, yet philosophers have continued to think of it as a passive process. Worse, they seem to think that our ordinary experience can be taken simply as given. I have always been puzzled by this, for it implies that philosophy cannot really change the way we look at things.

It is true that university philosophy courses often begin by rehearsing a number of ancient sceptical questions. How do we know this is a table? Can we be sure that the sun will rise tomorrow? Questions like this are the stock-in-trade of philosophy teachers. But if philosophers query common beliefs, it is normally only to reinstate them later. When Wittgenstein - perhaps the greatest 20th-century philosopher - declared that philosophy leaves everything as it is, he spoke for most philosophers today. The possibility that our everyday beliefs and perceptions may be delusions is not seriously contemplated. But our perceptions may be delusions for good reasons, and science may eventually explain why.

Our experience tells us that the Earth is flat. Science tells us that it is (roughly) spherical. Relying on our senses, we believe that the Earth does not move. Relying on science, we know that it rotates on its axis and revolves around the Sun. Astronomy shows that our everyday perceptions are in some respects mistaken. It might be objected that these are examples of simple perceptual illusion: they do not show that our basic beliefs are at fault.

The trouble with this response is that it fails to grasp just how radically science challenges the common-sense view of things. The passage of time, for example, is an integral part of our everyday experience, but some physicists believe time may not be part of the scheme of things. It is common sense to believe that we cannot change the world just by observing it. Yet, according to some interpretations of quantum mechanics, that is precisely what happens.

Whereas science expands our horizons beyond the confines of our ordinary understanding, philosophy ends by shutting us inside it. As someone working in

ethical and political philosophy, I have been particularly struck by the way many philosophers uncritically accept ordinary ways of thinking about humans.

Consider personal autonomy, which practically every contemporary philosopher believes to be a worthy ideal. When our actions involve weighty ethical issues, they should ideally be the result of conscious deliberation. This view presupposes that autonomy is a realistic possibility - but that is an assumption and cannot be taken for granted.

The ideal of autonomy comes from Immanuel Kant, who took it from Christianity. The notion that we are the authors of our own actions makes sense in the context of the religious belief that we are made in the image of God. It makes no sense in terms of the view of humans that is emerging from scientific inquiry. For our lives to be dictated by our choices, we must - at least potentially - be conscious of what we are doing. Unfortunately for those who subscribe to this familiar liberal ideal, science suggests that our lives can never be wholly, or even mainly, the products of conscious choices.

True, we can scrutinise our behaviour, and alter our habits. We can learn to act more skilfully. By developing these capacities we are better able to cope with our lives: through consciously reflecting on our behaviour we can identify habitual perceptions and responses that are ineffective or redundant, and take steps to alter them. These are surely conscious interventions in our lives. But they do not enable us to act more consciously. Rather, having acquired better habits and skills, we simply act more effectively. We are not making ourselves more like the conscious individuals we imagine ourselves to be.

Many scientists have taken from philosophers the belief that consciousness - the stream of subjective experience - is a mysterious process that needs an explanation. But as Susan Blackmore and others have argued ([New Scientist, 22 June, p 26](#)), this may be a mistake. Much as we think of it as the most indubitable feature of our experience, consciousness may be an illusion. The idea of a stream of consciousness suggests a continuous flow of subjective awareness in which items intermittently appear. But in Blackmore's view, there is no stream. Rather, our perceptions are moment-to-moment constructions that emerge from our bodily interactions with the world. A tennis player does not consciously see the ball, and then return the serve. She simply returns it. If we think of ourselves in this way, there is no need to posit the mysterious process that we traditionally call consciousness.

Cognitive scientists such as Varela present a parallel view. They argue that we overrate the importance of consciousness in our lives. Freud suggested that much of our mental life is unconscious. More radically, Varela argues that many of our mental processes and activities can never be conscious. It is not simply that the tennis player needn't be conscious of what she is doing. If she were conscious, she wouldn't be able to do it. If she had time to consciously note her perceptions, the moment for action would have gone. Training can enhance her

skill in returning a serve, and a part of that training will involve conscious learning. But the resulting skill is displayed in action that is too quick to be the result of conscious reflection or decision.

For Varela, this illustrates a wider truth. Our minds are not continuous, unified entities, but collections of activities and perceptions that - as Hume observed - are in perpetual flux and movement. Many of these activities and perceptions are unconscious, and many can never be conscious. As far as our subjective experience is concerned, the sensation of selfhood is overwhelming. But scientific research confirms Hume's more careful introspection in showing that this sensation is a delusion.

If cognitive science is right, the picture of humans that philosophers conjure up when defending ideals of personal autonomy is at least partly a chimera. Other research supports this conclusion. Work by Benjamin Libet at the University of California showed that the electrical impulse in the brain that initiates action occurs up to half a second before we take the decision to act. Our actions are initiated unconsciously. True, Libet allowed that we can veto what the brain has initiated, but it is unclear how we can ever know that we have deliberately exercised this capacity. For all practical purposes, it might as well not exist.

Research by Michael Gazzaniga and colleagues at Dartmouth College in Hanover, New Hampshire, on people with split brains suggests that we have developed a capacity for delusion for a reason. One side of our brains seems to have evolved to create narratives about the world and our activities in it.

Working with a war veteran who had had the connection between the hemispheres of his brain severed in an attempt to treat his epileptic fits, Gazzaniga discovered that the right hemisphere handles sensory inputs in basic ways, while the left hemisphere houses the ability to interpret our own thoughts, emotions and behaviour and develop accounts of how the world works. Our brain has evolved in this way, he concludes, in order to enhance our reproductive success.

The upshot of recent scientific research is that our common-sense understanding of ourselves must be revised, perhaps quite radically. Yet, with some exceptions, philosophy goes on as if nothing much has happened. Hume's insights into the complex, discontinuous processes that are concealed by our ordinary sense of personal identity have not been followed up. (One of the exceptions is Derek Parfit's book *Reasons and Persons*, which attempts to work out what a Humean view of personal identity means for ethics.) Why is this?

I believe the answer lies in what scientific knowledge means for our understanding of the human mind - including the philosopher's mind. From Plato through to Descartes and John Stuart Mill, philosophers have thought of our minds as instruments for seeking out the truth. Certainly, we often have false beliefs. But according to this tradition, there is nothing in the way our minds work

that prevents us from achieving a true view of things. Yet if Varela, Libet, Gazzaniga and others are right, this traditional assumption must be revised. Science shows that we are not the unitary, conscious agents we think we are. We are assemblages of perceptions and behaviours, in which consciousness figures only intermittently. Intellectually, we can know that this is the truth about ourselves. Even so, in our everyday experience we cannot escape the sensation of selfhood.

It is often suggested that our sense of selfhood is a product of cultural conditioning, but I think this is a way of dodging the issue. As far as we can tell, humans have always experienced themselves in this way. The protagonists of the Iliad and the Bhagavadgita are no different from us in the way they deliberate about their lives and decide what to do. The idea that the sensation of selfhood is a cultural construction is attractive because it suggests we can rid ourselves of the illusion simply by altering our cultural values. The findings of cognitive science show that this is itself an illusion. In moments of introspection or meditation, we may be able to glimpse just how insubstantial we really are, but in everyday life we cannot help feeling that we are solid, enduring subjects. We are hard-wired for the illusion of self.

The idea that our minds are programmed to generate illusions goes against the grain of philosophers, but it is all of a piece with an evolutionary understanding of the human animal. Darwinism teaches that our minds serve evolutionary fitness, not truth. We are not pure, inquiring minds accidentally stranded in the bodies of animals. We are animals. Minds are as much products of natural selection as are digestive systems. Our view of things is a product of our practical activities - seeking food and mates, using and devising tools, competing and cooperating with one another. There is no reason to think that it mirrors the world truthfully. Equally, there are no grounds for thinking that we are what we perceive ourselves to be.

Western philosophy insists on the differences between human minds and the minds of other animals. No one denies that there are important differences. After all, no other animal has developed science. But scientific inquiry suggests that the differences between us and other animals are not anything like as great as the Western tradition suggests. We may have a capacity for intellectual inquiry that other animals do not possess, but equally we have an inbuilt tendency to self-delusion that they lack.

The picture of the human animal that is emerging from science will unsettle people who hold to traditional ideas about consciousness, personal autonomy and the like. The idea that the ordinary sensation of selfhood is an error we cannot shake off suggests that some of the most valuable and distinctively human aspects of our lives may rest on illusions. Along with most philosophers, many scientists have subscribed to an ideal in which we can ultimately come to live without illusions. Ironically, scientific research demonstrates that these illusions are essential features of our normal functioning.

The best philosophy is like the best science. It changes the way we think about the world, and about ourselves. The world uncovered by science is in many ways quite different from that disclosed in ordinary experience. The challenge for science is to explain how the two are related. The challenge for philosophy is to show how we can live well in the light of this new, and in some ways deeply paradoxical, view of the human animal.

