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Minds and Objects: How Perceptual Psychology might Help us Decide Which Animals Have Minds

What is it to have a mind? Unless we can answer this question, there is no hope of answering the further question whether any non-human animal might have one. But it is by no means easy to say what it is to be a being with a mind. One obvious (and common) recourse is the concept of *consciousness*; a minded being, we might think, is a *conscious* being. But of course the concept of consciousness is tremendously obscure. One might wonder, indeed, whether it is really any clearer than the concept of a mind, which we tried to introduce it to clarify. Some people have equated consciousness with mere sentience, that is, the capacity to possess states which have what is sometimes called 'phenomenal' or 'experiential' content, to have what are sometimes called 'raw feels'. An example of such a state might be having an itch or a tickle, or registering a particular shade of blue. Others have thought, though, that it takes much more than mere sentience to possess true consciousness. For example, some very lowly creatures, such as molluscs and earthworms, probably have basic sentience of various kinds. It seems reasonable to suppose that even these relatively simple organisms might have sensations relating to such things as hunger, thirst and pain, the sorts of conditions to which an animal needs to be able to respond properly in order to survive. But one might hesitate, nevertheless, to think that such creatures are really conscious *of* anything. Even if we are prepared to accept that they are able to feel, it might be doubtful whether they have any consciousness which is genuinely *of* some thing, or state of affairs, as opposed to merely registering in a sensory way information about how things are in a certain region of their body. And some have thought that there cannot be true consciousness which is not consciousness *of* some thing, or state of affairs. Consciousness, then, is a rather contested notion and there appears to be no real agreement in philosophy about what exactly a conscious being must be able to do, feel or think.

In view of these difficulties with the concept of consciousness, one might wonder whether there is anywhere else to turn for help with thinking about what it is for a creature or system to have a mind. One interesting suggestion that has been popular in recent years makes use of the notion of *representational content*. It is easiest to begin thinking about representational content by considering some everyday examples of things which have it. This road sign, for example, has representational content because a suitably well-informed person who knows the conventions which the road sign uses can tell that the sign *says* or *indicates* or *represents the fact* that there is a junction coming up in 100 metres.



Or a set of black marks on a small piece of white card might have representational content, because someone who knows the English language will understand that these marks *say that* this ticket will admit one person to the Rembrandt exhibition. Now, some philosophers think that creatures with true minds must have states which have representational content – that is, they must have states which *indicate* that the world is a certain way and to which the world might or might not match up. A mere feeling of hunger need not have representational content. A hungry or an itchy creature

need have no conception of the hungry or itchy feeling as indicative of a state of its stomach, or of its skin; it may not know that it even has a stomach, or skin. Rather, it may just register the feeling and automatically respond. Merely to register a feeling and respond to it, though, is not to have a state with representational content. Sometimes, representational content is associated by philosophers with the 'that'-clauses we find in natural language. I may believe *that there is a junction coming up in 100 metres*, for example, or understand *that this ticket will admit me to the Rembrandt exhibition*. But the merely sentient creature (the mollusc or the earthworm) does not think or believe or perceive *that* anything is the case. It merely has a sensation to which it is responsive, and that is that. Those creatures which have states with representational content, though, have something more sophisticated than mere sentience – they have some sort of conception of, some sort of appreciation of, the world, as a thing, or set of things, or a place distinct from themselves. We might even want to say that they can have a certain kind of *thought* about the world and some of the things contained within it. So far as animals are concerned, we might have to allow that these thoughts are not linguistically expressible, or perhaps are not couched in the same concepts as ours are; perhaps, indeed, we might have to allow that they aren't couched in concepts *at all*, but have some other sort of distinctively non-conceptual form. But still, if these animals have states with representational content, states which the world might or might not match, they have a form of mindedness which is important, because it brings with it, a sort of proto-thought and therefore a level of sophistication and intelligence which goes beyond the mere registering of, and responsiveness to, important environmental information.

Tyler Burge, in his fascinating book, *The Origins of Objectivity*, has argued that it is of the essence of a truly psychological state to have representational content and he is happy to allow that such things as chimps, dogs, horses, elephants and birds are all able to represent the world in this contentful way. But how, one might ask, can we tell whether or not a creature has representational states? For Burge, the answer is to be sought in the scientific study of perception. Perception, for Burge, is the ground of representational content; it is the starting point for cognition, and the root of the capacity for representation. Some creatures, on Burge's view, are capable of what he calls *objective perception* – that is, they are able to represent their physical environment in such a way as to attribute specific physical properties such as size, shape, colour, location, and so on, to physical objects such as trees, stones and other animals. Whether or not a given species of animal can do this is something, he believes, which we can find out by way of perceptual psychology – by which, it turns out, Burge really seems to mean the science of *vision* (he says rather little about the other sensory modalities). Burge's central idea is that vision science itself contains the resources to say what distinguishes an objective representer of the world from a mere registrant of information, such as the mollusc or earthworm we considered earlier. For vision science takes a great interest in how the initial effects of light striking the retina in a certain pattern are converted by the brain into a visual representation of how things are. Any given pattern of retinal stimulation is consistent with a range of possible interpretations of the data, and it is the job of the visual system to 'decide' which representation to provide. It does this by reliance on a number of important *formation principles*, principles which effectively constitute bets made by the visual system on what the most likely causal source of any given retinal pattern of stimulation is likely to be. Sometimes, when we succumb to visual illusions of various sorts, we make the wrong bet. For example, in supposing that a merely 'visual' cliff is a real edge, we are making a mistaken bet of this sort. But in making these bets, Burge notes, the visual systems of many animals are predisposed to privilege external physical objects, presumably because those objects have been statistically the most common causes of the types of retinal stimulation involved in the evolutionary history of those animals. The mechanisms utilised include *convergence* (a means by which visual systems determine the distances of objects, and

which is dependent on geometrical relationships which can be discerned from binocular vision); and *lightness constancy* (which is a way of separating differences in the lightness of a surface which are due to variations in the surface itself from those which are due to differences in illumination); and there are many others. The various formation principles together serve to ensure, according to Burge, that animals whose visual systems utilise them are representing external objects and their properties, and thus that their perceptual states have representational content. Creatures whose perceptual systems work in this way, according to Burge, are the creatures with a true psychology.

Burge's view is radical and ingenious. It is radical because it dispenses with the traditional criterion of consciousness without indulging in an implausibly dogmatic insistence on the fundamentality of language to any possible form of cognition. It is ingenious because it suggests that the question whether an animal of a given species has a mind might actually be scientifically tractable, by reference to the deliverances of vision science. But is it right? Can we use the concept of representational content in order to decide which creatures have minds?

Unfortunately, I think there are general philosophical reasons to be worried about the notion of representational content, as it applies to mental states. I have no objection to the idea that there are things which may legitimately be said to have representational contents, things such as utterances in contexts; sentences in a given language; diagrams; maps; signs; gestures; and so on. Such things *say* or *mean* something to someone who is in a position to interpret them. But in these cases, there is (a) someone to whose understanding of the significance of an item of some kind the notion of content can be tied; and there is also (b) an item to *have* or *bear* the content (something which is often called the *vehicle* of content). For example, in the case of the road sign, the fact that the sign has content appears to depend on the fact that I (and other road users familiar with the requisite conventions) can interpret the sign as indicating the existence and distance of a certain junction; and there is in addition a hunk of painted metal to serve as the vehicle of content. It is by no means so clear that either of these things holds when we are talking about representational content in the mind itself. The term 'state' is thrown around very gaily in philosophy of mind, but is a state really an *item* of the sort which might possess content, the sort of thing that could be a vehicle? And one must also face the question of whether, in the case of purely mental content, we should continue to suppose that there is someone *to whom* these vehicular bearers of content (whatever they may be) have significance. If we say yes, we must confront the objection that we do not *seem* to stand in awareness relations of an ordinary sort to any such vehicles. But if we say no, we must ask what is really left of the intuitive notion of content, the notion that we come to understand in the first place by thinking about such things as written or spoken sentences or signs or diagrams.

I am rather sceptical, therefore, of approaches to mindedness which give representational content a starring role. On the other hand, I think there is much to be said for Burge's general idea that we can get some purchase on difficult questions about what forms of mindedness an animal might or might not be capable of by looking at their various perceptual mechanisms, some of which, as Burge points out, seem to be set up precisely to enable animals to single out *objects*, such as trees and stones and other animals – to lock onto these things attentively, follow them visually, act on them intentionally. It seems to me important, therefore, that we might perhaps be able to accept the latter point, without endorsing the whole-hearted representationalism that Burge appears to endorse. Here is a possible line one might take.

It seems very plausible that just like us, animals whose visual systems make use of the various mechanisms Burge identifies experience the world in a rather 'objecty' way. The data Burge cites concerning the ways in which many kinds of visual system have evolved to track objects, make

it reasonable to suppose that animals with these sorts of visual systems may, just like us, experience the world as containing entities which have a certain coherence, with which they associate certain important expectations concerning persistence, motion, affordances for action, and so on. To put it crudely, it is reasonable to suppose that the world might *look* objecty to such creatures, just as it looks objecty to us. And if things can look objecty to animals which have a range of systems for separating out such objects from a background, tracking them, and so on, we can straightforwardly allow that those animals can *see* those things. But we do not necessarily need to think of seeing as a *representational* state, an internal state whose content needs a 'that'-clause for its expression. Rather, we can think of seeing as a *relation* between a subject and a real object in the external world, a relation which can hold only in cases in which that object truly appears objecty to the perceiver (as opposed to, for example, merely being located within the visual field of the perceiver without having been made perceptually salient – think of the way a yellow post-it note glued tightly to a yellow wall of exactly the same shade might 'blend in' to the background, so that one does not see it, even though one might be staring at the right place on the wall) . The capacity to see objects is itself, therefore, already an advance on an experiential 'raw feel', because it involves a certain capacity to single out an object for perceptual attention, tracking, and so on, a capacity which a mere light-sensitive mollusc, for example might be thought to lack. But we need not talk of representational states here, states which require that-clauses for their specification. That is to go much further than we need to go in order to make the sorts of distinctions we need to make between creatures with consciousness *of* things, and creatures with mere sentience. The ability simply to perceive objects is already an achievement which surpasses what many mere sentients can manage.

Much more needs to be said, clearly, about how one might extrapolate from the case of vision to the other senses – and whether senses other than vision can deliver the kind of relatedness to objects I have suggested that seeing can provide. But I think the general idea that the capacity to single out an object *as* an object, to track its movements through space and (perhaps) to act on it in various ways is a significant feature of sophisticated minds is an extremely valuable one which deserves to be disentangled from its potentially problematic reliance on the notion of a mental state with representational content.