

Human and Animal Consciousness

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Abstract

Do animals have sensations just as humans do? In addressing this question I explore some necessary, though not sufficient, conditions for conscious experience. Phenomenal sensations, I argue, are not biologically basic, and hence appeals to shared physiology are not sufficient to make the case for animal sensation. I suggest that consciousness can be divided into two notions: a short term phenomenal consciousness and a longer term, fully fledged, personal consciousness. I argue that it is having the latter that really matters with respect to having the sorts of pleasures and pains about which we ought to care.

Human and Animal Consciousness

1. Introduction

I want to start my paper with a quote from Colin McGinn. Roughly speaking McGinn's theory of consciousness is that we can't have one. He does believe that a science of consciousness - a

In this paper I want to face the issues square on, putting all sentiment aside. In this I follow Peter Carruthers (1992) who has recently written on the issue of animal rights and animal consciousness (see also Regan, 1983). With Carruthers I share the conviction that there is a fact of the matter as to whether animals have consciousness - whether they feel their pains, itches and pleasures - and I agree that were we to discover that they did not we should have to think long and hard about the ethical consequences. Carruthers tries to develop a sketch theory of consciousness and then to show that animals don't have it. Here I too will try to develop a sketch theory of consciousness, or at least an account of some necessary conditions for it, but you will have to wait and see whether I think animals meet its criteria.

I shall begin by saying a little bit about animals and how we should interpret their behaviour. The enormous wealth of ethological data, and ever advancing physiological studies, tell us more about animals than we have ever known before. But so far this data has left many important controversies intact (Walker, 1983; Oakley, 1985). Then I shall make some points about the differences between discrimination and awareness. I shall go on to try and show that there are conceptual arguments which can be developed to say what sort of structure is necessary (if not sufficient) for awareness to take place. Crucial at this stage will be an argument about time and experience - I shall suggest that unless a creature can experience in time, it cannot experience at all.

Before moving on to human consciousness a bridging section, "Subjects and Sensations", will try and pull together the points already made. Here I shall be stressing the importance of a subject of experience, and suggesting that much work in this area fails to take the importance of the subject sufficiently seriously. I shall suggest that the notion of a subject and the notion of a story-teller are closely linked. The fourth section, "People" will address human consciousness. Here I shall try to show that some of the classic sensation states, such as pain, are not biologically basic. Odd as this may sound - after all when we are in pain we often feel closest to our animal origins - I shall present some scientific evidence which support, and make plausible, this philosophical view. With some kind of sketch theory of consciousness in place the final section will look at the behavioural and internal structural demands the theory would make of conscious creatures. I shall try to assess whether any non-human animals can meet the theory's demands. Or, more cautiously, I shall try to show how one might set about deciding whether any given animal might meet a necessary (if not sufficient) set of criteria for consciousness.¹

¹ The account of consciousness I sketch here is heavily influenced by Dennett (1991). The stress of temporality and the importance of narrative are echoed in Humphrey (1992) and Flanagan (1992) respectively.

2. Animal Consciousness

Discrimination versus Awareness

difference between detection (or discrimination) and perception, and the difference is simply that perception involves consciousness, whereas detection does not.²

Methodology

Now the difficulty one faces when trying to take a naturalistic - or broadly scientific - approach to consciousness is this. You take on board the difference between discrimination and awareness of stimuli and, bearing it mind, go on to look at the mechanisms which make up creatures. But when you do, all you can find are sets of discriminative systems, and nowhere a perceptual system. This is something Leibniz noted some time ago in the following well known passage:

Moreover, it must be avowed that perception and what depends upon it cannot possibly be explained by mechanical reasons, that is, by figure and movement. Suppose that there be a machine, the structure of which produces thinking, feeling and perceiving; imagine this machine enlarged but preserving the same proportions, so that you could enter it as if it were a mill. This being supposed, you might visit its inside; but what would you observe there? Nothing but parts which and push and move each other, and never anything that could explain perception. (Monadology 17).

My basic response to Leibniz's point is to argue that there is something like a category mistake occurring here (Ryle, 1949). Even the staunchest artificial intelligence theorist, or most devout neuroscientist ought not to expect to find a perceptual system For it is not a brain, or a computer, or any kind of cognitive mechanism which does the perceiving - all the hardware does is discriminate. It is agents that perceive. The agents we are most familiar with - persons - are not the same as their brains, and their abilities and capacities are not the same as the abilities and capacities of their brains. But, whilst this diagnosis is of some help, there is clearly a great deal of difficulty relating the role of cognitive mechanisms (with all their much studied, and much studiable, inner parts) and the nature of (conscious) agency. I think that most of what I say here can stand independently of a debate about how mechanisms relate to agents, but I shall return briefly to this issue in the final section.

² I am appropriating terms here: I trust the reader will allow my distinction even if she objects to my terminology.

Molluscs: Concepts for Awareness

Let me introduce two technical terms from the philosophy of mind. Philosophers of mind like to talk about mental states: these are such things as beliefs, desires, hopes, fears, pains, tastes, noticings, itches and so forth. Mental states are characterized by their phenomenal properties - what it is like to have them - and by their “content”. The term “content” is widely used, and often in different ways, but, roughly, the mental content of a state is what that state is about. So the content of a pain state would include all the judgements which you make about that pain, i.e. where it is, how it compares with other pains, whether it is throbbing etc. The content of your belief that your pet armadillo is missing, is the proposition that your pet armadillo is missing. Contents can always be specified by propositions - or statements of how the world might be - whereas, of course, the way mental states feel can never be so expressed. Basically anything which you can fit into a proposition is part of the content, and anything you cannot is a phenomenal property. When a mental state is neatly divided into its content component and its phenomenal component, the phenomenal component is called a “quale”, or raw feel. Raw feels are known collectively as “qualia”.

It is quite a popular view that solving the problem of content is a lot easier than solving the problem of qualia. Cognitive scientists, as well as mental philosophers, feel that work on content is progressing, and that there are no monolithic blocks to future progress.³ But very often the consciousness aspect of mental experiences is taken to be completely independent of the content aspect. I want to argue that this is not so, that you need have pretty sophisticated mental contents if any of your mental states are to be conscious. If my argument succeeds the upshot will be that creatures with a simple behavioural repertoire, creatures to which we could not make sophisticated attributions of content, just could not be conscious. And that, in part, shows that the phenomenal character of mental states does not come for free on account of the type of nervous system you have. No special privileges should be granted to creatures with, say, a biological nervous system as opposed to one of the artificial silicon kind, if they do not even meet the minimal standards of sophistication. I suggest that phenomenal character has to be earned through the functions that your nervous system provides.

³ This comment will rightly outrage many for, certainly, there is little agreement in the field. For an explicit expression of the sentiment see Humphrey (1992). For some contrasting views amongst those who are concerned with the project of naturalizing content see Dennett (1987), Dretske (1988), Fodor (1987), Millikan (1984), McGinn (1989) and Churchland (1989).

So what is the minimal content ascription that is required in order to say that a creature has, say, a painful mental state? I start with what I hope is not too contentious a claim. That is to say that to have any sensation or feeling at all it is necessary that you can have a contrasting sensation or feeling. Recently the flavour of this point was put to me very forcefully, and delightfully, by a passage from Melville. Ishmael tells us:

We felt very nice and snug, the more so since it was so chilly out of doors; indeed out of bedclothes too, seeing that there was no fire in the room. The more so, I say, because truly to enjoy bodily warmth, some small part of you must be cold, for there is no quality in this world that is not what it is merely by contrast. Nothing exists in itself. If you flatter yourself that you are all over comfortable, and have been so a long time, then you cannot be said to be comfortable any more. But if ... the tip of your nose or the crown of your head be slightly chilled, why then, indeed, in general consciousness you feel most delightfully and unmistakably warm. (Herman Melville, *Moby Dick*, 1851: 51)

So to be able to have a pain, I claim, you must also be able to have an absence of pain, or at least a difference in degree of pain. Now certain rather unsophisticated cognizers, say molluscs, may fulfil the basic requirement for having a range of discriminative states. They may have a range of different states, some of which strongly activate avoidance behaviour, and others which weakly activate it. But does the mollusc experience pain?

The sophisticated mollusc, who can remember five minutes ago and last week, is able to recall previous occasions when she, Freda Mollusc, was in pain, and occasions when she was not. But the more ordinary mollusc, call him Joe, may not be up to this sort of thing. Joe Mollusc does not know who he is, let alone what he was doing five minutes ago. He cannot represent such things to himself. So, if someone claims that Joe is in pain, what is being ascribed to him is clearly very different from what would be ascribed to Freda in similar (outward) circumstances - and of course different again to what would be ascribed to a person. (Freda does not just run away from painful stimuli, she thinks, "Oh no, not again!") If Joe Mollusc lives in a continuous present⁴ - as we are told goldfish do - can he undergo mental events with a content sufficiently close to our notion, or even Freda's notion, for us to call it pain?

What I am suggesting then, and what I take to be contentious, is that a concept of pain, or any concept of sensation, requires some temporal understanding. If you cannot conceive of an

⁴ I'm fudging a bit here. Actually I don't think Joe lives "in" a present at all. If Joe's putative inner life is atemporal, then his inner life is no kind of inner life at all.

absence of some stimuli as you are undergoing that stimuli then in what sense can you be said to be aware of that stimuli? And it is no answer to say that you are “aware” of it in that its presence causes a change in your behaviour - that is merely a reflection of the fact that the state is a discriminative one, and in no way indicative of it being a conscious state. Without some kind of “temporal understanding” to conceptualize it you do not have the capacity to discriminate the potential sensation (the discriminative state) “as” a sensation. Without that conceptual capacity it is just a driving state, part of your internal mechanism, and not part of your state of mind.⁵

This is the shape of the argument, but a more evenly paced working should help shows its impact. But first another relevant quote, this time from William James:

[Even] into our awareness of the thunder the awareness of the previous silence creeps and continues; for what we hear when the thunder crashes is not thunder pure, but thunder-breaking-upon-silence and contrasting with it... The thunder itself we believe to abolish and exclude the silence; but the feeling of the thunder is also the feeling of the silence as just gone; and it would be difficult to find in the actual concrete occurrence of a man a feeling so limited to the present as not have an inkling of anything that went before. (1892: 174)

Let me re-iterate the point about the importance of discriminatory capacity as far as content ascription is concerned. It is a simple point about caution. When we see some creature behaving in a sensible way, apparently responding to the particular features of its environment in an intelligent manner, we are often inclined to think it knows rather more about the world than in fact it does. Take the following example, adapted for my purposes from Dennett (1992), of a creature who sees something cross the sky. A person might be able to judge, as well as remark, that a bird, or a whole flock, has passed by. But a more limited cognizer can at

(what your thoughts are about), but sense (the way in which your thoughts present themselves to you).⁶

That the contents of a stream of consciousness are limited by a creature's discriminatory ability is fairly obvious. If a mollusc were conscious it would have a very impoverished conscious life - nothing like the rich panorama of sights, tastes and sounds which make up our world view. And even creatures with better sensory equipment may not have the cognitive sophistication to break the world up into objects and spaces and so, if they see anything at all, it is not merely a black and white version of human experience, but a great deal thinner still.⁷

But this kind of argument is not enough of itself to show that the mollusc cannot be a conscious creature of however meagre an outlook. After all people who are short sighted can only judge, without inference, that the sky has gone "all birdish". But that they are conscious is not affected by whether or not they are wearing their glasses. However, if we run the same kind of argument again, only this time looking at the temporal aspects of experiences and discrimination, then I may be able to establish my conclusion. I want to maintain that consciousness requires making discriminations across time. To have conscious experiences at all you must be able to distinguish between what is happening to you now from what has happened to you in the past (and what might happen in the future.) And I think this is so because unless you can discriminate between your state now and your state at some other point

But something has gone seriously wrong here. In fact I feel as though a Cheshire cat trick has been pulled.

“Well! I’ve often come across a subject without a sensation,” thought Matthew, “but a sensation without a subject! It’s the most curious notion I ever came across in all my life.” (Matthew Elton, *Human and Animal Consciousness*, 1993)

Churchland’s position concentrates on the state (the wretched qualia) at the expense of the subject. But the idea that a brain state can phenomenally luminesce, thus giving rise to consciousness, more or less independently of the complexity of the agent which the nervous system realizes, is severely under motivated. Churchland has made the mistake of failing to distinguish discriminative states - which the neural states he hopes to discover undoubtedly are - and states of awareness.

Many qualia fans support Churchland because he takes a very realist stance. And those same fans eschew Dennett (1988, 1991) for his apparent denial of qualia. But what Dennett is concerned to deny is that a discriminative state of a brain be identified with a conscious state of a person. To illustrate the point here is an argument taken from Dennett’s landmark article, “Quining Qualia”.

Imagine a pair of coffee tasters: Mr. Chase and Mr. Sanborn. Both coffee tasters find themselves dissatisfied with the taste of the coffee which they used to enjoy, but offer different reasons. Chase maintains that the coffee tastes the same to him as it always did, but he now responds to that same taste in a different way. His qualia have remained constant while his judgements have changed. Sanborn, on the other hand, maintains that he still likes the taste the coffee used to have for him, but his taste buds have changed such that now the coffee tastes different to him. His qualia have changed but his judgements have remained the same.

But nothing in introspection can be used to tell these two hypotheses apart. The coherence of the two stories rests on making a scientific distinction between the sensation state (qualia) and the response (the apprehension of the qualia). And it is the drawing of this line to which Dennett quite rightly objects. For what could there be at the dividing line - what could it be that lay on the judging side of the line? Could it be anything other than a conscious agent, a Cartesian Self? If that is the conclusion then we have yet to even begin to explain consciousness - we have just shifted the problem back one stage, and probably made it rather harder for ourselves.

Note that the point here is very much philosophical. Dennett is prepared to concede that neurophysiology might turn up some interesting features which superficially correspond to discrimination states. But such states would not be qualia.

properties. But such an account opens the way for creatures with little in the way of cognitive sophistication acquiring consciousness. With the mollusc argument I have tried to question the coherence of such a position.

I now want to drive the wedge from the opposite direction, by considering some interesting phenomena of consciousness in human beings. If conscious sensation were identical with some kind of physical phenomena, such as the firing of the much mythologized C-fibres, then certain consequences would tend to follow for the unity of mind, and conscious experience. If the narrative account were closer to the mark, then the consequences would be rather different. For example it would follow that it would not be impossible for a conscious creature to hallucinate pain, i.e. to report (or express) pain (however this is normally achieved) without being in any of the (primitive) neurophysiological states which are usually correlated with pain. Moreover it would not be impossible for it not to feel pain, to fail to take note of its pain, even if the (primitive) neurophysiological correlates were present, even if major tissue damage were being inflicted. And more generally if the story were true then it would be logically possible, though not necessarily so, that more than one experiential narrative could be spun by any given brain at a time.

So the story would make many things not impossible. But of course disunity phenomena are not merely not impossible they are actual and widespread. In the next sub-section I shall provide a whistle-stop tour of some of the more interesting disunity phenomena revealed by psychologists.

Unity and Disunity

Hypnotic analgesia has probably been known about, in one form or another, for many centuries, but it is only in the last 150 years that this, and other hypnotic phenomena, have been scientifically studied with any rigour. (See Bowers (1976) and Hilgard (1986) for detailed reviews.) Scepticism still abounds, but the phenomena is real and has been studied extensively in laboratory conditions. For any sceptics a quote from James Esdaile provides a spirited antidote. Esdaile was an English surgeon who practised surgery in India between 1845 and 1851 using hypnotic techniques to anaesthetize his patients. He gained considerable “word of mouth” success and wondered how to account for it:

[Either my patients] say to their friends similarly afflicted, “Wah! brother, what a soft man the doctor Sahib is! He cut me to pieces for twenty minutes, and I made him believe that I did not feel it. Isn’t it a capital joke? Do go and play him the same trick; you only have to laugh in your elbow and you will not feel the pain.” Or they say to their brother

spun at a time, then interpretation becomes much more straightforward. Is there any more evidence that might support the story? I think there is. From abnormal psychology we have the startling phenomenon of multiple personality disorder (Wilkes, 1988; Hilgard, 1986; Humphrey and Dennett, 1989). This is a condition where several distinct personalities appear to share occupancy of a single body. Of all the dissociative phenomena reported in the literature multiple personality disorder is the most extreme and the most fascinating. And as with the analgesia case multiple personality disorder questions the idea of identifying conscious sensations with states of the body. A feature of multiple personality is that some personalities have apparent access to the experience and memories of others, but this relationship need not be

But now my view begins to look too liberal. Surely there is some temporally local fact about my states of consciousness. If I forget my drive later in the day and just cannot recall it however hard I try, does that somehow cast my conscious experience into doubt. Dennett's persuasive arguments concerning the indeterminacy of consciousness all seem to involve a short time frame, more usually fractions of a second, rather than minutes or hours. Although I have rejected the Churchland-Searle realist type approach to what makes experiences conscious, the account now offered looks too unreal - relying on relations across time which seem inappropriate.

5. Bringing It All Together

Kinds of Consciousness

How can I resolve the tension between my attraction to the indeterminacy espoused by Dennett and the determinedly realist intuitions which I find hard to shake off? My tentative solution here is to make a distinction between phenomenal consciousness of the "specious present" - what I

it]: “Thou art mine, and part of the same self with me.” Each later thought, knowing and including thus the thoughts that went before, is the final receptacle ... of all that they contain and own...

It is impossible to discover any ... features in personal identity which this sketch does not contain, impossible to imagine how any [other scheme could give] any other result ... than just this production of a stream of consciousness each successive part of which should know, and knowing, hug to itself and adopt, all those that went before, - thus standing as the representative of an entire past stream with which it is in no wise to be identified. (William James, 1892: 215-216 - my italics)

If some creature has agent consciousness - a conscious history partly made up of conscious occurrences - then there is no doubt she feels her pains and savours her food. And there is no doubt that her pain must be taken into account when considering ethical questions, such as whether she suffers. But what if a creature had no agent consciousness, but only conscious occurrences? We might think this was true of the famous patient H.M. (Ellis and Young, 1988) whose ability to lay down new memories was tragically destroyed as a result of a vital brain operation. H.M. cannot remember what you said to him a few minutes ago, nor even recognize you. So if he suffered yesterday he will not know it now. Does that mean we should not take regard of his suffering? Present to H.M.’s mind, in his specious present, is the whole of his life up to the point of his operation. Thus when he suffers pain it is against the backdrop of a whole life, and hence, I think we should treat his pain as we treat the pain of ordinary human beings. (When injured H.M. thinks, “Oh no! Not more pain, hasn’t my life been wretched enough already.”) H.M. is locked into a continuous present, but he does have a past. But if H.M. had neither past nor present, if he just had a short span of specious consciousness, should we then consider him as suffering when he has a painful conscious occurrence?

And what now of animals? Many animals share much of our neurophysiology, especially the higher primates. And these animals are capable of very many sensory discriminations. But are they also narrative spinners, and hence, on my view, possessed of consciousness? That is to say do they, by means of telling themselves their own story, have awareness of their sensory discriminations? Dennett (1991), though he fudges somewhat in his book, seems to have argued himself into a position where he has to say no. For him the narrative spinning is all done by means of language and language is acquired through complex cultural learning. Animals do not have the kind of language with which Dennett, and much of philosophy, finds himself concerned.

While I buy into the narrative style account it does not seem at all clear that my self-avowal of the painfulness of my experiences, of their colourful nature, comes down to a linguistic judgement. It is a judgement all right - it has propositional content. But judgements with propositional content do not need to be linguistic in form. So, just as I experience colours, tastes, sights, sounds and pains, I see no good reason why higher order mammals should not.

Where I do find Dennett's stress on language convincing, however, is in the area of agent consciousness. So what I would like to suggest is that many animals do have the capacity to have "conscious occurrences" but to cast doubt on their having the capacity for "agent consciousness". It seems much more plausible to say you couldn't have that kind of consciousness without language. So, in effect, I wonder if many animals have a sense of personal identity. A well developed notion of self, a self with a history and a future, and thus a narrative told with tensed language, requires considerable narrative sophistication. Wittgenstein cheerfully ascribes to a dog the belief that his master is at the door, but doubts that the dog could believe that his master will come the day after tomorrow (1953, p. 174). There is a lot of interesting empirical work in this area - such as Gallup's (1982) experiments with mirrors and primates. That some primates can recognize themselves in mirrors, is taken as positive evidence for a fairly well developed self-concept. But, of course, accurately assessing the beliefs of non-language users is very difficult.

Promises Fulfilled

Before I close I want to fulfil a promise I made earlier. This account of consciousness is built on an account of content. It holds that a necessary, if not sufficient, condition of consciousness is the having of mental states with a certain degree of sophistication in terms of their content. And so, if we can determine the content of animal mental states, we can go some way to determining if they meet some of the necessary conditions for consciousness. And so my argument circumnavigates the seemingly impossible problem of checking for consciousness directly, something we cannot do with people or animals. Of course determining the content of the mental states of animals is not a straightforward task. Indeed rowing over how to do this for people is a popular philosophical sport. But it is a task which looks as though it might be tractable.¹¹

¹¹ In the animals case Jonathan Bennett (1976, 1964) has a very good go, and Dennett (1983) makes an interesting contribution. See also Davidson (1982) for a bit of scepticism about animal belief. If Davidson is right about animals and beliefs then, on my account, no animal has agent consciousness.

Note now how the structure of my account to some degree addresses the problem I raised with the Leibniz quote back at the start of the talk. My necessary criteria for consciousness are not determined by looking at the insides or by checking internal structures. Or at least they are determined by such only in as much as those considerations bear on how we attribute content. I like to think there is a good story to be told relating internal working to content, but if you disagree then my argument should still go through.

Conclusions

Most of my paper has been concerned with an analysis of the some necessary conditions for

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