

PHENOMENAL CONSCIOUSNESS, ACCESS CONSCIOUSNESS, AND INFORMATION PROCESSING PSYCHOLOGY

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ABSTRACT

The notion of phenomenal consciousness is introduced and an argument for its elusiveness is presented. While it is not clear that this argument would warrant an ontological conclusion, it does present a problem for the project of explaining phenomenal consciousness in terms of the physical sciences. An argument for the view that phenomenal consciousness must inevitably remain a mystery is considered, as are the prospects for demystifying the notion. It is plausible that, while many aspects of phenomenal consciousness can be adequately explained, there is an unanswered question about why there is phenomenal consciousness at all. In the final section, we turn to the distinction between phenomenal consciousness and access consciousness, and consider the claim that much cognitive psychological theorising about consciousness is undermined by a failure to make this distinction.

1. Phenomenal Consciousness

In 1956, Ullin Place introduced a precursor of central state materialism in response to the recognition that, even if analytical behaviourism were acceptable for the propositional attitudes states such as beliefs, it was not adequate for conscious states such as sensations. Thus (Place, 1956/1990, p. 30):

there would seem to be an intractable residue of concepts clustering around the notions of consciousness, experience, sensation, and mental imagery, where some sort of inner process story is unavoidable.

However, the idea that types of conscious experience are to be identified with types of brain process seems to leave an important question unanswered. We can make the question vivid, by using the idea of there being *something that it is like* to be in a certain state – and, more generally, the idea of there being something that it is like to be a certain creature or system. Thomas Nagel introduces the idea this way (1974/1979, p. 166):

[N]o matter how the form [of conscious experience] may vary, the fact that an organism has conscious experience *at all* means, basically, that there is something that it is like to *be* that organism. . . . [F]undamentally, an organism has conscious mental states if and only if there is something that it is like to *be* that organism – something it is like *for* the organism.

The intuition is that, since a brick does not have conscious experiences, there is nothing that it is like to be a brick. Likewise, there is nothing that it is like to be a laser printer. On the other hand, supposing that bats and dolphins do have conscious experiences, there is something that it is like to be a bat, or a dolphin. Certainly, there is something that it is like to be a human being.

If there is something that it is like to be a certain creature, then there may also be something that it is like, for that creature, to be in some specific state. In our own mental lives, perceptual and sensational states provide clear examples. There is something that it is like to see a bottle of red wine on a white tablecloth, to hear a piano playing somewhere off to the left, to feel an itch, a pain, or a tickle. These

experiences – conscious experiences – have a subjective phenomenal, character; they are examples of phenomenal consciousness.

1.1 Nagel's Argument for Elusiveness

We can now pose the question that the identification of conscious experiences with brain processes seems to leave unanswered. Why should there be something that it is like for certain processes to be occurring in our brains? Nagel's view is that this question is one that we do not even know how to begin to answer. Thus (1974/1979, p. 175):

If mental processes are indeed physical processes, then there is something that it is like, intrinsically, to undergo certain physical processes. What it is for such a thing to be the case remains a mystery.

Indeed, Nagel argues that the subjective phenomenal properties of experience fall outside the compass of a physicalist view of the world (*ibid.*, p. 176):

If physicalism is to be defended, the phenomenological features must themselves be given a physical account. But when we examine their subjective character it seems that such a result is impossible. The reason is that every subjective phenomenon is essentially connected with a single point of view, and it seems inevitable that an objective, physical theory will abandon that point of view.

Clearly, the notion of a *point of view* is crucial to Nagel's argument. Someone might take a point of view to be something that is private to an individual; but this is not the notion that is important for Nagel's argument. He is concerned with a type: something that is shared by many individuals in virtue of their having similar perceptual systems. A point of view – determined by a collection of perceptual systems – constitutes a kind of limitation upon what is conceivable for an individual. Since experience furnishes the raw materials for imagination, there may be some aspects of the world that are beyond the imaginative reach of creatures with one point of view, but within the imaginative reach of creatures with a different point of view.

Nagel offers an example that has become '[t]he most widely cited and influential thought experiment about consciousness' (Dennett, 1991, p. 441). It concerns the 'specific subjective character' of a bat's experience which, Nagel suggests, might be 'beyond our ability to conceive' (1974/1979, p. 170). The point here is not just that we might not be able to conceive how the bat's brain gives rise to the bat's consciousness. The point is more dramatic. We might not be able to form a conception of the subjective character of a bat's conscious experience. We might not be able to imagine what it is like to be a bat. In contrast, because human beings share a point of view, we can conceive of, think about, and talk about, the character of our own, and each other's, experience.

The facts about the subjective character of a bat's experience might be inaccessible to us. This would not be, fundamentally, because we could frame the relevant hypotheses but could not gather the evidence to confirm them. Rather, the problem is that we may lack the conceptual resources even to frame the correct hypotheses. In contrast, we have the resources to frame hypotheses about the subjective character of the experience of another human being. The examples of a bat and of a human being illustrate that the accessibility or inaccessibility of facts about the subjective character of another creature's experience is quite sensitive to our point of view.

This basic idea is not undermined by the suggestion that some human beings may have more flexible imaginations, and so may be better placed than others to achieve an adequate conception of bat phenomenology. What matters is that, where the subjective character of experience is concerned, accessibility of the facts is sensitive to our point of view, at least to some considerable extent. The contrast that is crucial for Nagel's argument is the contrast between these facts about the subjective character of experience, on the one hand, and facts about physics or neurophysiology, on the other hand.

Our grasp of subjective facts depends very much upon our point of view, and so upon our particular perceptual systems. But, in order to grasp the concepts deployed in physical or neurophysiological theory, a creature does not need to have the same perceptual systems that we have: 'intelligent bats or Martians might learn more about the human brain than we ever will' (Nagel, 1974/1979, p. 172). So, in contrast to the accessibility of subjective facts, the accessibility of physical or neurophysiological facts is not especially sensitive to our point of view. This is the difference between phenomenological facts and physical or neurophysiological facts upon which Nagel's argument turns. The difference may be one of degree; and, of course, we are able to grasp both phenomenological and physical facts about ourselves and other human beings. But, in the one case (the phenomenological) and not in the other (the physical), that ability depends upon the nature of our perceptual systems and the character of the experiences that they furnish.

Phenomenological facts seem to have a property that physical facts lack. If that is right, then it follows by logic alone that phenomenological facts are not physical facts. The subjective character of experience eludes a physicalist theory of the world.

1.2 Sense and Reference

Nagel's conclusion about the elusiveness of phenomenal consciousness is arrived at by an argument that turns on a distinction between two kinds of facts. But it is not yet clear what is established by this argument. In particular, it is not clear whether the argument licenses an ontological conclusion, to the effect that conscious experiences cannot be identified with brain processes. In order to get clearer about this, we need to pay attention to a potential ambiguity in the idea of a fact.

It is a familiar idea from Frege (1892) that the contents of thoughts are discriminated more finely than the objects and properties that those thoughts are about. Thus, the thought that Hesperus is a planet is arguably a different thought from the thought that Phosphorus is a planet. The two contents involve different concepts, different ways of thinking of the planet Venus. The first content involves a concept, possession of which is grounded in the ability to recognise the planet Venus in the evening sky. The second content involves a concept whose possession is similarly grounded in the ability to recognise Venus in the morning sky. We might even say that the first thought is inaccessible for someone who goes to bed sufficiently early, while the second thought is inaccessible for someone who sleeps in sufficiently late.

But, now, should we say that the fact that Hesperus is a planet is a different fact from the fact that Phosphorus is a planet? The answer depends upon how fine-grained facts are. We might take facts to be correct thoughts, in which case facts will be just as fine-grained as thought content. On the other hand, we might take facts to be states of affairs, built from the objects and properties that the correct thoughts are about. In that case, facts would be discriminated in a much more coarse-grained way. In Frege's (1892) terminology, we could say that, on the first construal, facts belong at the level of *sense*; on the second construal they belong at the level of *reference*.

If facts belong at the level of sense and are equated with correct thoughts, then the fact that Hesperus is a planet is different from the fact that Phosphorus is a planet. But if facts belong at the level of reference and are equated with states of affairs, then the fact that Hesperus is a planet and the fact that Phosphorus is a planet are one and the same fact. For what in the world makes the first thought correct is just the same as what in the world makes the second thought correct; namely, the object Venus exemplifying the property of being a planet. One and the same state of affairs can be thought about in two different ways, because one and the same object can be thought about in two different ways.

We said that, for a late sleeper, Phosphorus thoughts are inaccessible, while Hesperus thoughts are, of course, accessible. The late sleeper is not able to apprehend the thought that Phosphorus is a planet, since he lacks a certain conceptual ability. The late sleeper does not possess the way of thinking of Venus that is grounded in an ability to recognise that planet in the morning sky. But the late sleeper might build up a body of knowledge – a theory – about the planet Venus. He might come to know that Hesperus is a planet, that Hesperus appears in the evening, that Hesperus also appears in the morning, that Hesperus is called 'Hesperus', that Hesperus is also called 'Phosphorus', and so on. In thinking these thoughts – including the thought that Hesperus is called 'Phosphorus' – the late sleeper would deploy the way of thinking of Venus that is grounded in the ability to recognise it in the evening sky.

Now, are there facts about the planet Hesperus (that is, Phosphorus; that is, Venus) that elude the late sleeper's theory? There are certainly thoughts about Venus that are inaccessible to the late sleeper; namely, Phosphorus thoughts. But it does not follow that the late sleeper's theory provides an incomplete account of the planet Hesperus (that is, of Phosphorus; that is, of Venus). It would certainly be wrong to infer that reality includes items that are different in kind from the items that the late sleeper's theory speaks of. For the inaccessible thoughts are thoughts about the very same item that the accessible thought are about.

Just as it would be wrong to draw an ontological conclusion in this case, so also someone might object to Nagel's argument leading up to the conclusion about the elusiveness of consciousness. It is open to someone to say that Nagel's argument does not show that physicalism provides an incomplete account of the world. What it shows is only that certain physical states can be thought about in very different ways; rather as the planet Venus can be thought about in different ways. A Fregean might put the point by saying that Nagel demonstrates a difference between the physical and the phenomenal at the level of sense, but does not demonstrate a difference at the level of reference.

Anticipating this line of response to his argument, Nagel suggests that the case of conscious experience is different from typical cases where we can separate the level of reference from the level of sense. In the case of a planet, there is a clear separation between the object that is thought about, and the *mode of presentation* (Frege, 1892) of that object – between the object as it is, and the way that the object appears. In such a case, two different modes of presentation can make possible two different ways of thinking about one and the same object. But, in the case of an experience, there is no separation between the way that the experience is and the way that it appears. So, Nagel claims (1974/1979, pp. 173-4), his argument for the metaphysical elusiveness of consciousness is not open to the objection based on the ambiguity in the idea of a fact.

There are further responses that can be made to Nagel at this point. But, however the ensuing turns in the dialectic may play out, Nagel poses a problem that remains even if we allow that no ontological conclusion can be drawn from his argument and that conscious experiences are to be identified with physical events or processes in the brain (1974/1979, p. 175):

If we acknowledge that a physical theory of mind must account for the subjective character of experience, we must admit that no presently available conception gives us a clue how this could be done. The problem is unique. If mental processes are indeed physical processes, then there is something that it is like, intrinsically, to undergo certain physical processes. What it is for such a thing to be the case remains a mystery.

Phenomenal consciousness seems to defy explanation in terms of any of the physical sciences.

1.3 Two Comparisons: Block and Jackson

Nagel's argument, leading up to his announcement of mystery, can be compared with two other arguments: Ned Block's (1978) *absent qualia argument*, and Frank Jackson's (1982, 1986) *knowledge argument*.

The absent qualia argument is specifically directed against functionalism: the idea that mental states are individuated by the causal roles that they play in the total mental economy, rather than by the particular neurophysiological ways in which the roles are realised. According to functionalism, a human being and a computer could be in mental states of just the same type, despite the vast differences in physical constitution. But this liberalism poses a problem for functionalism. For we can imagine the various functional roles being played by states that are very different from the states of human brains; and for at least some of these imagined systems there is a powerful intuition that there would be nothing that it is like to be the system in question. For example, there are imaginable systems such that, despite the fact that there is some realiser of the pain functional role in the system, the intuition is that the system does not experience pain. More generally, the position for which Block argues is that a system may have internal states playing each of the causal roles specified by some commonsense or scientific psychological theory, and yet lack states with phenomenal character. This is to say that qualia – the subjective properties of phenomenal states – may be absent from such a system.

Block reveals some sympathy for Nagel's perception of a mystery at the heart of the mind-body problem (1978, p. 293):

No physical mechanism seems very intuitively plausible as a seat of qualia, least of all a brain.

Since we know that *we are brain-headed systems*, and that *we* have qualia, we know that brain-headed systems can have qualia. [But] we have no theory of qualia which explains how this is possible . . .

But, his actual argument seeks to demonstrate, not that phenomenal consciousness eludes physicalism, but that it eludes functionalism. The absent qualia argument would not work against a different physicalist philosophy of mind (central state materialism) that exchanges liberalism for chauvinism, and individuates mental states by the neurophysiological realisers of causal roles, rather than by the roles themselves. In short, Block's argument is importantly different from Nagel's. Block's argument is not intended for use against a physicalist who (in the style of Place and subsequent central state materialists) identifies being in pain with having C-fibres firing, whereas such a physicalist is very much included amongst the targets of Nagel's argument.

In this respect, Jackson's knowledge argument is like Nagel's argument, and unlike Block's. Thus (Jackson, 1982, p. 127):

I am what is sometimes known as a 'qualia freak'. I think that there are certain features of the bodily sensations especially, but also of certain perceptual experiences, which no amount of purely physical information includes. Tell me everything physical there is to tell about what is going on in a living brain, the kind of states, their functional role, their relation to what goes on at other times and in other brains, and so on and so forth, and be I as clever as can be in fitting it all together, you won't have told me about the hurtfulness of pains, the itchiness of itches, pangs of jealousy, or about the characteristic experience of tasting a lemon, smelling a rose, hearing a loud noise or seeing the sky.

Jackson's argument depends on an imaginary scientist – indeed, a neurophysiologist – Mary, who knows everything there is to know about the physics and neurophysiology of visual experience, but whose own visual experience has hitherto been exclusively monochrome. When Mary first sees in colour, she learns something 'about the world and our visual experience of it' (1982, p. 130). But, *ex hypothesi*, Mary has nothing to learn about the physics or physiology of visual experience. Consequently, what she learns is something that eludes physicalism.

Now, Jackson (1982) claims that his argument is quite different from Nagel's, for two reasons. First, Jackson says that Nagel is concerned with something essentially first-personal: what it is like to be a particular individual experiencing subject. Second, Jackson says that Nagel is concerned with the actual limits of our 'imaginative or extrapolative powers' (Jackson, 1982, p. 132). But, it is not really obvious that these concerns loom so large in Nagel's argument. On the first point, Nagel says (1974/1979, p. 171):

I am not adverting here to the alleged privacy of experience to its possessor. The point of view in question is not one accessible only to a single individual. Rather it is a *type*.

And on the second point, Nagel says (*ibid.*, p. 172, fn. 8):

It may be easier than I suppose to transcend inter-species barriers with the aid of the imagination. For example, blind people are able to detect objects near them by a form of sonar, using vocal clicks or taps of a cane. Perhaps if one knew what that was like, one could by extension imagine roughly what it was like to possess the much more refined sonar of a bat.

So, perhaps we can agree to group Jackson's knowledge argument together with at least one important strand in Nagel's influential paper (cf. Jackson, 1986); namely, the argument for elusiveness that we described in Section 1.1.

(It is worth noting here that it is possible to appeal to the sense *versus* reference distinction in response to Jackson's knowledge argument. Jackson rejects this kind of response. For a recent account see Braddon-Mitchell and Jackson, 1996, p. 130. They do, nevertheless, argue that there *must* be something wrong with the knowledge argument (*ibid.* p. 134)).

2. Must Phenomenal Consciousness Remain a Mystery?

In this section we first consider an important argument for the view that an explanation of phenomenal consciousness is beyond our cognitive capacities, and then turn to the prospects for demystifying phenomenal consciousness.

2.1 *An Argument for the Inevitability of Mystery*

As we have just seen, Nagel's announcement of mystery (1974/1979, p. 175):

If mental processes are indeed physical processes, then there is something that it is like, intrinsically, to undergo certain physical processes. What it is for such a thing to be the case remains a mystery.

is echoed by Block (1978) and Jackson (1982, 1986). It is given a particularly strong formulation by Colin McGinn (1989).

Jackson (1982), Nagel (1986) and McGinn (1989) claim that it should be intelligible to us that there may be much about the way that the world works that lies beyond our human understanding. McGinn (1989) develops this idea and advances an argument for the proposition that understanding how physical processes give rise to consciousness – how it is that 'there is something that it is like, intrinsically, to undergo certain physical processes' – is beyond us.

McGinn argues that, although the brain is the seat of consciousness in virtue of certain of its properties, what those properties are, and how they give rise to phenomenal consciousness, is beyond our cognitive grasp. Ontologically, consciousness has a material basis; but epistemologically, we are doomed to be without an explanation of this. McGinn's argument for this prospect proceeds by considering in turn the ways in which we might hope to achieve a grasp of what it is about the brain that gives rise to consciousness.

There are two putative routes to a grasp of the neural basis of consciousness. On the one hand, we might rely upon consciousness itself, and hope for an introspective fix upon the explanatory basis of phenomenal consciousness. On the other hand, we might turn to the scientific study of the brain. Of the two, the first seems utterly hopeless, since (McGinn, 1989/1991, p. 8): 'Introspection does not present conscious states *as* depending upon the brain in some intelligible way.' So, the argument focuses for the most part upon the prospects for a neuroscientific explanation of consciousness. Can we attain any conception of a neuroscientific property of the brain adequate to explain consciousness?

McGinn's argument for a negative answer to this question proceeds in two steps. The first step says that ordinary perception of the brain does not bring us up against any such property. The second step says that no such property is going to be introduced by inference to the best explanation from perceptible properties of the brain.

The first step of the argument seems right. When we casually observe a human brain – greyish-pink, clammy and somewhat granular in texture, weighing in at just

over two pounds – we do not come upon anything that makes it intelligible that the brain is the seat of phenomenal consciousness. The colour, texture and mass of the brain – being properties that the brain shares with other organic and inorganic chunks of matter – do not carry any hint of the gaudy flow of conscious experience.

These gross observable properties of the brain – and other, smaller-scale properties, too – have to be explained. But, according to the second step of the argument, whatever explanation of these observable properties may be offered, it will not introduce any property of the brain that could explain consciousness (McGinn, 1989/1991, p. 13):

To explain the observed physical data we need only such theoretical properties as bear upon those data, not the property that explains consciousness, which does not occur in the data. Since we do not need consciousness to explain those data, we do not need the property that explains consciousness.

Putting the two steps together, we arrive at the conclusion that neither experience nor theory yields us any grasp upon a natural property of the brain that can explain consciousness. Consciousness has a material basis, but what that basis is we cannot grasp.

This argument is controversial, and is far from being universally accepted. Flanagan (1992, Chapter 6), for example, offers a detailed critique. One aspect of the argument that is striking is that the treatments of the two putative routes to a grasp of the neural basis of consciousness are structurally different. The assessment of the second route involves two steps, one concerning perception and one concerning inference to the best explanation. But the assessment of the first route involves only one step. Introspection does not reveal to us the neural basis of consciousness. We might have expected that, here too, there would be a second step, considering whether a property that could explain consciousness might be introduced by way of inference to the best explanation. So long as that possibility is not closed off, the argument seems to be incomplete.

If the treatments of the two routes were to have the same structure – so that the argument could be seen to be complete – then the crucial question would concern inference to the best explanation of the phenomena that are revealed to introspection. Could this afford us a grasp upon the material basis of conscious experience? But the problem with this question is that it is too close to the question that the argument as a whole is supposed to answer: Can we understand how a property of the brain could give rise to the subjective character of experience – the character that is revealed to introspection? So, on the face of it, there is something question-begging about the argument as a whole. (Cf. Flanagan, 1992, p. 113: ‘McGinn’s misstep comes from forgetting that consciousness has already been introduced.’)

Nagel announced a mystery, and McGinn went a step further by arguing that mystery is inevitable here. There are queries that can be raised about McGinn’s argument for inevitability. But still the actual mystery seems to remain.

2.2 The Higher-Order Thought Theory of Consciousness

One possible strategy for demystifying the notion of consciousness – the ‘what it is like’ aspect of experience – is to claim that consciousness is a matter of thought about mental states.

One philosopher who favours this strategy is Rosenthal (1986). He begins (1986/1991, p. 463) from the idea that mental states have either intentional properties or phenomenal (or sensory) properties. Furthermore, it is plausible that mental states are the only things that have these properties non-derivatively. Consequently, Rosenthal proposes, we can use the disjunction of phenomenal and (non-derived) intentional properties to mark out the class of mental states, and then use some further criterion to distinguish conscious states as a subclass of mental states.

The aim of the exercise is to provide a non-circular account of consciousness in terms that do not appear to be so mysterious. So, it is important that the notions of phenomenal property and intentional property should not already involve the idea of consciousness.

If we allow this starting point, then the basic idea in Rosenthal's construction of the notion of consciousness is fairly straightforward (1986/1991, p. 465):

Conscious states are simply mental states we are conscious of being in. And, in general, our being conscious of something is just a matter of our having a thought of some sort about it. Accordingly, it is natural to identify a mental state's being conscious with one's having a roughly contemporaneous thought that one is in that mental state.

In this construction, consciousness *of* something is analysed in terms of having a thought about that thing. And consciousness – considered as a property of mental states – is analysed in terms of consciousness *of* that mental state. For a mental state to be a conscious mental state is for the subject of the state to have a thought about it. Since the item being thought about is a mental state – perhaps itself a thought – the thought about it is said to be a *higher-order thought*, and the resulting account of consciousness is called the higher-order thought theory of consciousness.

If such a theory were to be correct, then the occurrence of consciousness in the natural order need not be especially mysterious (1986/1991, p. 465):

Since a mental state is conscious if it is accompanied by a suitable higher-order thought, we can explain a mental state's being conscious by hypothesizing that the mental state itself causes that higher-order thought to occur.

But, in fact, there are some quite serious problems for the higher-order thought theory.

We shall consider, first, an objection that does not really constitute a serious problem. Someone might say that, while she certainly enjoys conscious mental states, she is largely unaware of the higher-order thoughts that Rosenthal's account of conscious mental states requires. This is not a serious problem for the account, since to say that the subject is unaware of (or is not conscious of) the higher-order thoughts is – according to the account – to say that those higher-order thoughts are not themselves conscious mental states. But, the analysis does not say that for a mental state to be conscious the subject must have a *conscious* thought about it – just that the subject must have a thought about it (1986/1991, p. 465).

Another challenge arises from the fact that the account appears to allow for the coherence of the idea of unconscious sensations. A mental state with phenomenal properties might occur without being accompanied by a thought about that state. And, at least initially, this may seem quite counterintuitive. But it is not obvious that there is a really serious problem for the account here. The role of unconscious sensations might, for example, be underwritten by everyday experience – the

persistent headache from which one is nevertheless distracted, or which one forgets about for a while. And, in any case, we might be willing to overcome the initial impression of counterintuitiveness if the higher-order thought theory had other highly attractive features.

The challenge that Rosenthal reckons to be ‘perhaps the strongest objection’ to the higher-order thought account of consciousness is that we intuitively ascribe consciousness to the states of creatures that we would not credit with the power of thought. His response comes in two stages.

The first stage of the response is to stress that the thought that is required if a phenomenal (rather than intentional) mental state is to be conscious is not a very sophisticated thought – so the potential for such thoughts imposes relatively modest demands upon a creature. The second stage is to suggest that, where a creature does not even measure up to those modest demands, an intuition that the creature is nevertheless conscious can still be salvaged. For, in one sense of the term, ‘For an organism to be conscious means only that it is awake, and mentally responsive to sensory stimuli’ (1986/1991, p. 473).

This second stage of the response is not wholly satisfying. From the point of view of someone who starts with any sympathy at all for Nagel’s position, it will seem that what is being offered here is not really consciousness without thought. Being ‘awake, and mentally responsive to sensory stimuli’ is not clearly sufficient for the ‘what it is like’ notion of consciousness. Indeed, unless so much weight is laid on the term ‘mental’ as to rob the second stage of its dialectical point, it is unclear that ‘awake and mentally responsive’ requires anything more than a functioning stimulus-response system. The real issue turns upon the first stage of the response.

But the first stage of the response invites the worry that the higher-order thought theory faces a dilemma. If the notion of thought that is employed is a demanding one, then, it seems, there could be something that it is like for a creature to be in certain states even though the creature did not have (perhaps, even, could not have) any thoughts about those states. Higher-order thought is not necessary for consciousness. But, if the notion of thought that is employed is a thin and undemanding one, then higher-order thought is not sufficient for consciousness. Suppose, for example, that thought is said to require no more than having discriminative capacities. Then it seems clear that a creature, or other system, could be in a certain type of mental state, and could have a capacity to detect whether or not it was in a state of that type, even though there was nothing that it was like to be that creature or system.

In fact, the situation is a little more complex than this dilemma reveals. According to the dilemma, there is a query about the necessity of the account, given a rich notion of thought, and a query about its sufficiency, given a thin notion of thought. But, by considering conscious beliefs as well as conscious sensations, we can see that there is also a worry about the sufficiency of the account, even given a rich notion of thought. It is possible to imagine cases in which a subject has a belief, and also judges himself to have that belief, but where both the first-order belief and the second-order belief would intuitively be counted as unconscious beliefs. One kind of example would involve unconscious guilt about having an unconscious belief, since the guilt would plausibly be based upon recognition (also

unconscious) that one has the belief. This recognition would amount to a higher-order thought about the first-order belief; but it would not be enough to make the belief conscious (cf. Peacocke, 1992, p. 154).

2.3 *Demystifying Phenomenal Consciousness*

In general, work towards the demystification of phenomenal consciousness has a negative and a positive aspect. The negative aspect consists in seeking to reveal unclarity and paradoxes in the notion of the subjective phenomenal character of experience (e.g. Dennett, 1988, 1991; Dennett and Kinsbourne, 1992). The importance of this work is that it raises the possibility that the sense of mystery surrounding consciousness is not the result of a clear insight about an explanatory gap (Levine, 1983), but is rather the product of deeply tempting fallacies and confusions.

The positive aspect of work towards demystification consists in offering putative explanations of one or another property of conscious experience in neural terms. Churchland (1988, p. 148) provides a clear example of a way of explaining some features of our experiences of colour. Intuitively, we say that an experience of orange is more like an experience of red than it is like an experience of blue. And we say that the experience of orange is somehow intermediate between an experience of red and an experience of yellow. The neural coding of colour involves triples of activation values $\langle x, y, z \rangle$, corresponding to the illumination reaching three families of cones (photoreceptors in the retina), which are, in turn, sensitive to three ranges of wave lengths. These triples of values can be plotted as points in a three-dimensional space. In that space, the neural correlate of an experience of orange is closer to the neural correlate of an experience of red, than to the correlate of an experience of blue. And the neural code for orange is between the code for red and the code for yellow.

This does seem to provide a satisfying explanation of those particular properties – phenomenal similarity and ‘between-ness’ – of our colour experience. We might call these *structural* properties of experience, and surmise that we have here a vindication of a remark of Nagel’s (1974/1979, p. 179):

[S]tructural features of perception might be more accessible to objective description . . . Aspects of subjective experience that admitted this kind of objective description might be better candidates for objective explanation of a more familiar sort.

But Nagel actually says a little more: ‘[S]tructural features of perception might be more accessible to objective description, *even though something would be left out.*’ (emphasis added) Experiences have properties other than their structural properties, and these – Nagel is saying – still resist explanation in objective terms, that is, in terms of the physical sciences. Perhaps we can capture this idea by saying that the triples of activation values, and the structural properties of the three-dimensional space in which they are plotted, provide an explanation as to why what it is like to see red is similar to what it is like to see orange, and so on. But they do not provide an explanation as to why it is like *anything at all* to see red. Why there are experiential correlates of these neural codes is left as a brute unexplained fact.

In response to the idea that explanations of consciousness can go a long way but still a kernel of mystery remains, an advocate of demystification is liable to say that the appearance of mystery is an artefact of an overly severe standard for

explanations. Flanagan, for example, says that McGinn imposes an ‘impossibly high standard on intelligibility’ (1992, p. 115). The demystifier says that Nagel and others are asking for an explanation that presents an *a priori* logical connection between the explaining facts (facts about neural activations and the like) and the facts to be explained (facts about what it is like to have this or that experience). This is a standard that we do not impose in the natural sciences. But, the defender of Nagel’s position may retort that the demystifier is pitching the standards of explanation too low. Statements of brute correlation are not to be mistaken for genuine explanations. So, it seems that further progress here may depend upon a better understanding of the nature of explanation itself.

3. Access Consciousness and Information Processing Psychology

We have been discussing phenomenal consciousness and the subjective character of experience. Intuitively, we would say that the subject of perceptual and sensational experiences is in a peculiarly authoritative position to make judgements about those experiences – about what it is like to have those experiences. But, privileged first-person introspective access does not seem to be restricted to experiences. Many philosophers hold that we are also in an especially authoritative position to pronounce upon our own thoughts – our beliefs and intentions, for example. Consequently, it is tempting to group experiences and thoughts together as conscious states. Certainly, it is natural to describe both seeings and tickles, on the one hand, and beliefs and intentions, on the other, as components in our conscious mental lives.

This simple assimilation is, however, problematic. One unattractive consequence of thinking about the consciousness of experiences and the consciousness of beliefs or intentions in just the same way is that the idea of an unconscious belief or intention becomes just as problematic as the idea of an unconscious pain or tickle. It may be that, at the end of the day, we shall be obliged to recognise the existence of unfelt sensations. But, it is not an obviously contradictory or incoherent idea that we might want to reject the category of unconscious pains or tickles, without also placing the whole Freudian strand of empirical psychology under a cloud.

There are other reasons, as well, for thinking that the classification of experiences and thoughts together is too simple. Our privileged access to thoughts is, to a first approximation, a matter of the contents of our beliefs and intentions being available for verbal report (Fodor, 1983, p. 56). Beliefs and intentions are states with semantic content (intentionality or aboutness), and a normal adult human being can express the contents of those states in a public language. The case of sensations – pains or tickles – seems to be rather different, since it is not clear that they have any semantic content at all.

3.1 Access Consciousness

It is helpful here to distinguish between phenomenal consciousness and what Block (1995) calls *access consciousness*. This is, very roughly, the idea of availability of content for verbal report. So, while phenomenal consciousness applies most directly to sensations and other experiences, access consciousness applies most directly to thoughts.

Even from this rough initial characterisation of access consciousness, it is apparent that the two notions of consciousness seem to be relatively independent of each other. On the one hand, it is natural to suppose that there can be sensations without thoughts; there can be phenomenal consciousness without access consciousness. On the other hand, it is very plausible that a system may be capable of information processing and of language production, although there is nothing that it is like to be that system. Such a system would exhibit nothing of phenomenal consciousness, but a part of what is involved in the idea of access consciousness.

Block's own definition of access consciousness is as follows (1995, p. 231):

A state is access-conscious if, in virtue of one's having the state, a representation of its content is (1) inferentially promiscuous, i.e. poised to be used as a premise in reasoning, (2) poised for rational control of action, and (3) poised for rational control of speech. . . . I see [access consciousness] as a cluster concept, in which (3) – roughly, reportability – is the element of the cluster with the smallest weight, though (3) is often the best practical guide to [access consciousness].

Block then argues that it is possible to have access consciousness (A-consciousness) without phenomenal consciousness (P-consciousness), and P-consciousness without A-consciousness.

His example of A-consciousness without P-consciousness is an imaginary phenomenon of 'superblindsight' (1995, p. 233). The idea here is that in ordinary cases of blindsight, patients are able to guess correctly whether there is, for example, an O or an X in the blind region of their visual field, even though they are unable to see either an O or an X there. The state that represents an O or an X is not a P-conscious state. But nor is it A-conscious, according to Block's definition. In superblindsight, there is still no P-consciousness, but now the patient is imagined to be able to make free use in reasoning of the information that there is an O, or that there is an X.

Block's example of P-consciousness without A-consciousness is a situation in which there is a noise (a pneumatic drill) to which we pay no attention because we are engrossed in conversation. Here the idea is that there is a P-conscious experience of the drill even while we are paying no attention to it, but that the content of this experience only becomes available for use in reasoning – the state only becomes A-conscious – when we notice the noise of the drill.

There are many aspects of the distinction between P-consciousness and A-consciousness that merit discussion. But here our purpose is just to note that Block uses the distinction in order to criticise a number of theories about consciousness that have been offered by information processing psychologists.

There have been many attempts to associate or identify various aspects of consciousness with information processing constructs, involving the operation of, for example, short-term memory, attentional, and central executive systems, often with a (usually serial) 'limited capacity'. According to Block, much of this psychological theorising is undermined by a failure to distinguish between P-consciousness and A-consciousness.

3.2 Consciousness and Information Processing Psychology

What we have said so far suggests that, even if the structural features of experience can be adequately explained in information processing terms, still we

shall be left with the question why there should be something rather than nothing that it is like to have certain processes going on in our brains. If that is right, then current information processing theories of P-consciousness are bound to be incomplete. On the other hand, it is not so clear that there is any equally robust obstacle in the way of an information processing explanation of A-consciousness. So there is a sense in which standard cognitive psychological accounts of consciousness are more appropriate to A-consciousness than to P-consciousness. For A-consciousness is more likely to be satisfactorily explained in information processing terms than P-consciousness is. But it does not follow from this that there is any systematic tendency towards confused theorising in information processing psychology, nor that information processing theories trade on a failure to distinguish between the two notions of consciousness.

We can achieve a more sympathetic view of the cognitive psychological literature if we begin from the plausible folk psychological idea that P-consciousness may figure in the causal explanation of A-consciousness. Block's notion of A-consciousness is a dispositional notion; and when a state has a dispositional property, it is natural to seek a more intrinsic property of the state in virtue of which it has that disposition. So, we can ask, in virtue of what property of my pain state am I in a position to report that I have a pain? Or, in virtue of what property of the pain in my leg is it the case that the content *I have a pain in my leg* is poised for rational control of my actions? The intuitive folk psychological answer is that these dispositions are grounded in my pain's being a P-conscious state. It is because the pain is P-conscious that it is A-conscious.

We may be able to say something similar in the case of propositional attitude states. An A-conscious belief has dispositional properties. Once again we may ask for a property of the belief state that explains why the content of the belief is poised to figure in theoretical and practical reasoning, and why I am able to express and report the belief. It is not an easy question whether the notion of P-consciousness should be extended to beliefs; but Block is explicit that it should be. If we share that view, then we can say that it is in virtue of being a P-conscious state that a belief has the dispositional properties characteristic of A-consciousness.

This folk psychological view of the relation between P-consciousness and A-consciousness cannot currently be fully reflected in information processing psychology. Given the explanatory gap, we cannot give a full explanation of P-consciousness in information processing terms. But the causal relation between P-consciousness and A-consciousness could be partially reflected in a psychological theory. Such a partial reflection would be seen, for example, in the idea that the conditions that explain structural features of phenomenal experience should be found amongst the immediate antecedents of the processing that underpins reasoning, decision taking, and reporting. This view would also encourage the thought that there is an asymmetric dependence between P-consciousness and A-consciousness. If, as we are actually constituted, P-consciousness is the categorical and relatively intrinsic basis for the dispositional and relatively relational A-consciousness, then we should expect there to be actual cases of P-consciousness without A-consciousness produced when crucial relational links are missing. But, we should not expect to find actual cases of A-consciousness without P-consciousness.

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