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On a confusion about a function of consciousness

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Abstract: Consciousness is a mongrel concept: there are a number of very different "consciousnesses." Phenomenal consciousness is experience; the phenomenally conscious aspect of a state is what it is like to be in that state. The mark of access-consciousness, by contrast, is availability for use in reasoning and rationally guiding speech and action. These concepts are often partly or totally conflated, with bad results. This target article uses as an example a form of reasoning about a function of "consciousness" based on the phenomenon of blindsight. Some information about stimuli in the blind field is represented in the brains of blindsight patients, as shown by their correct "guesses." They cannot harness this information in the service of action, however, and this is said to show that a function of phenomenal consciousness is somehow to enable information represented in the brain to guide action. But stimuli in the blind field are *both* access-unconscious and phenomenally unconscious. The fallacy is: an obvious function of the machinery of access-consciousness is illicitly transferred to phenomenal consciousness.

Keywords: access; attention; awareness; blindsight; consciousness; function; retrieval

1. Introduction

The concept of consciousness is a hybrid, or better, a mongrel concept: the word "consciousness" connotes a number of different concepts and denotes a number of different phenomena. We reason about "consciousness" using some premises that apply to one of the phenomena that fall under "consciousness," other premises that apply to other "consciousnesses," and we end up with trouble. There are many parallels in the history of science. Aristotle used "velocity" sometimes to mean average velocity and sometimes to mean instantaneous velocity; his failure to see the distinction caused confusion (Kuhn 1964). The Florentine Experimenters of the seventeenth century used a single word (roughly translatable as "degree of heat") for temperature and for heat, generating paradoxes. For example, when they measured "degree of heat" by whether various heat sources could melt paraffin, heat source *A* came out hotter than *B*, but when they measured "degree of heat" by how much ice a heat source could melt in a given time, *B* was hotter than *A* (Wiser & Carey 1983). These are very different cases, but there is a similarity, one that they share with the case of "consciousness." The similarity is: very different concepts are treated as a single concept. I think we all have some tendency to make this mistake in the case of "consciousness."

Though the problem I am concerned with appears in many lines of thought about consciousness, it will be convenient to focus on one of them. My main illustration of the kind of confusion I am talking about concerns reasoning about the *function* of consciousness. The issue of the function of consciousness is, in fact, more the *platform* of this article than its topic. Because the article attempts to expose a confusion, it is primarily concerned with reasoning, not with data. Long stretches of text without data may make some readers uncomfortable, as will my fanciful thought-experiments. But if you are interested in consciousness, then if I am right you can't afford to lose patience. A stylistic matter: because this paper will have audiences with different concerns, I have adopted the practice of putting in footnotes items that will mainly be of technical interest to part of the audience. Footnotes can be skipped without losing the thread. I now turn to blindsight and its role in reasoning about a function of consciousness.

Patients with damage in primary visual cortex typically have "blind" areas in their visual fields. If the experimenter flashes a stimulus in one of these blind areas and asks the patient what he saw, the patient answers "nothing." The striking phenomenon is that some (but not all) of these patients are able to "guess" reliably about certain features of the stimulus, features having to do with motion, location, direction (e.g., whether a grid is horizontal or vertical). In "guessing," they are able to discriminate some simple forms. If they are asked to grasp an object in the blind field (which they say they cannot see), they can shape their hands in a way appropriate to grasping it, and there are some signs of color discrimination. It is interesting that visual acuity (as measured, e.g., by how fine a grating can be detected) increases further from where the patient is looking in blindsight, the opposite of normal sight. (Blindsight was first noticed by Pöppel et al., 1973; there is now a huge body of literature on this and related phenomena. See Bornstein & Pittman 1992; Milner & Rugg 1992.) [See also Campion et al.: "Is Blindsight an Effect of Scattered Light, Spared Cortex, and Near-threshold Vision?" *BBS* 6(3) 1983.]

Consciousness in some sense is apparently missing

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(though see McGinn, 1991, p. 112, for an argument to the contrary), and with it the ability to deploy information in reasoning and rational control of action. For example, Marcel (1986) observed that a thirsty blindsight patient would not reach for a glass of water in his blind field (one must grant Marcel some "poetic license" in this influential example; blindsight patients appear to have insufficient form perception in their blind fields to pick out a glass of water). It is tempting to argue (Barrs 1988; Flanagan 1991; 1992; Marcel 1986; 1988; van Gulick 1989) that because consciousness is missing in blindsight, consciousness must have a function of somehow enabling information represented in the brain to be used in reasoning, reporting, and rationally guiding action. I mean the "rationally" to exclude the "guessing" kind of guidance of action that blindsight patients *are* capable of in the case of stimuli presented to the blind field. The idea is that when a content is not conscious – as in the blindsight patient's blind field perceptual contents, it can influence behavior in various ways, but only when the content is conscious does it play a *rational* role; and so consciousness must be involved in promoting this rational role.

A related argument is also tempting: van Gulick (1989) and Searle (1992) discuss Penfield's (1975) observations of epileptics who have a seizure while walking, driving, or playing the piano. The epileptics continue their activities in a routinized, mechanical way despite, it is said, a total lack of consciousness. Searle says that because consciousness as well as flexibility and creativity of behavior are missing, we can conclude that a function of consciousness is somehow to promote flexibility and creativity. These two arguments are the springboard for this target article. Although some variants of this sort of reasoning have some merit, they are often given more weight than they deserve, because of a persistent fallacy involving a conflation of two very different concepts of consciousness.

The plan of the paper is as follows: in the following section I will briefly discuss some other syndromes much like blindsight, sketching one model that has been offered for explaining them. Then, in the longest part of the paper, I will distinguish the two concepts of consciousness whose conflation is the root of the fallacious arguments. Once that is done, I will sketch what is wrong with the target reasoning and also what is right about it, concluding with some remarks on how it is possible to investigate the function of consciousness empirically without having much of an idea about the scientific nature of consciousness.

2. Other syndromes and Schacter's model

To introduce a second blindsight-like syndrome, I want first to explain a syndrome that is *not* like blindsight: prosopagnosia (*prosop* = face, *agnosia* = neurological deficit in recognizing). Prosopagnosics are unable to recognize visually their closest relatives – even pictures of themselves, though usually they have no trouble recognizing their friends by their voices or, according to anecdotal reports, visually recognizing people by recognizing characteristic motions of their bodies. Although there is wide variation from case to case, prosopagnosia is compatible with a high degree of visual ability, even in tasks involving faces.

One patient who has been studied by my colleagues in the Boston area is LH, a Harvard undergraduate who emerged from a car accident with very localized brain damage that left him unable to recognize even his mother. His girl friend began to wear a special ribbon so that he would know who she was. Now, years later, he still cannot identify his mother or his wife and children from photographs (Etcoff et al. 1991). Still, if shown a photo and asked to choose another photo of the same person from a set of, say, five photos presented simultaneously with the original, LH can do almost as well as normal people despite differences between the target and matching photos in lighting, angle, and expression.

Now we are ready for the analog of blindsight. The phenomenon is exhibited in many experimental paradigms, but I will mention only this: it has recently been discovered (by Sergent & Poncet 1990) that some prosopagnosics are very good at "guessing" between two names in the same occupational category ("Reagan" and "Bush") for a person whose face they claim is unfamiliar (see Young 1994a; 1994b; Young & de Haan 1993, for a description of these phenomenon). Interestingly, LH does not appear to have "covert knowledge" of the people whose faces he sees, but he does appear to have "covert knowledge" of their facial expressions (Etcoff et al. 1992).

Many such phenomena in brain-damaged patients have now been explored using the techniques of cognitive and physiological psychology. Further, there are a variety of phenomena that occur in normal people like you and me. For example, suppose that you are given a string of words and asked to count the vowels. This can be done so that you will have no conscious recollection or even recognition of the words, and you will be unable to "guess" at a level above chance which words you have seen. However, if I give you a series of word stems to complete according to your whim, the likelihood of your completing "rea-" as "reason" is greater if "reason" is one of the words that you saw, even if you do not recall or recognize it as one of the words you saw (see Bowers & Schacter 1990; Reingold & Merikle 1993).[1]

Recall that the target reasoning (the reasoning I will be saying is substantially confused but also substantially right) is that when consciousness is missing subjects cannot report or reason about nonconscious contents or use them to guide action; we can conclude that a function of consciousness is to facilitate reasoning, reporting, and guiding action. This reasoning is partially captured in a model suggested by Schacter (1989, see also Schacter et al. 1988) in a paper reviewing phenomena such as the ones described above. Figure 1 is derived from Schacter's model.

The model is only partial (that is, it models some aspects of the mind but not others), and so may be a bit hard to grasp for those who are used to seeing inputs and outputs. Think of the hands and feet as connected to the Response Systems box, and the eyes and ears as connected to the specialized modules. (See Schacter, 1989, for some indication of how these suggestions are oversimplified.) The key feature of the model is that it contains a box for something called "phenomenal consciousness." I'll address this in more detail later, but for now let me just say that phenomenal consciousness is experience; what makes a state phenomenally conscious is that there is something "it is like" (Nagel 1974) to be in that state. The

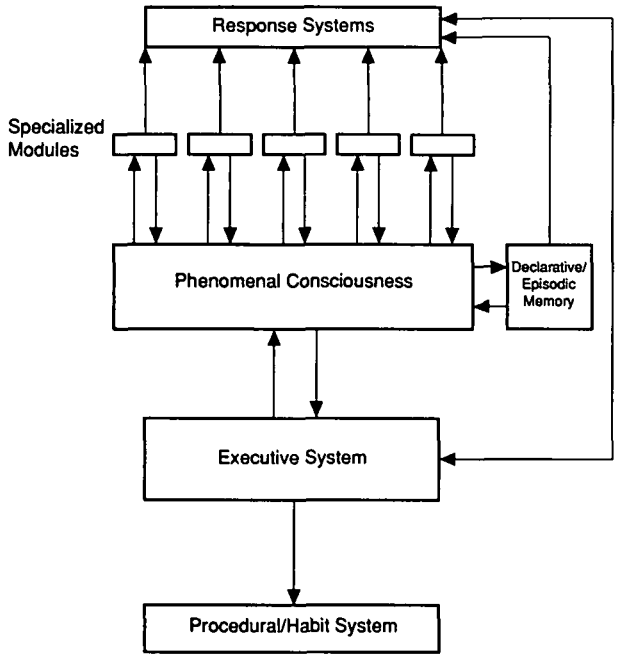

Figure 1. Schacter's Model

model dictates that the phenomenal consciousness module has a function: it is the gateway between the special purpose "knowledge" modules and the central Executive System that is in charge of direct control of reasoning, reporting, and guiding action. So, a function of consciousness according to this model includes integrating the outputs of the specialized modules and transmitting the integrated contents to mechanisms of reasoning and control of action and reporting.

I will be using this model as a focus of discussion, but I hope that my using it for this purpose will not be taken as an endorsement of the model itself. I have no commitment to a single executive system or even to a phenomenal consciousness module. One can accept the idea of phenomenal consciousness as distinct from any cognitive or functional or intentional notion while frowning on a modular treatment of it. Perhaps, for example, phenomenal consciousness is a feature of the whole brain.

Many thinkers will hate any model that treats phenomenal consciousness as something that could be accomplished by a distinct system.[2] I call that feature "Cartesian modularism," by analogy with the "Cartesian materialism" of Dennett and Kinsbourne (1992a), the view that consciousness occupies a literal place in the brain. Modules are individuated by their function, so the point of the box's place between the specialized modules and the Executive System is to indicate that there is a single system that has the function of talking to the specialized modules and integrating their outputs, and talking to the Executive System, passing on information from the specialized modules. There is an additional point in calling that system the phenomenal consciousness system, however, namely to say that phenomenal consciousness is somehow involved in performing that function. The idea is that phenomenal consciousness *really does* something, that it is involved somehow in powering the wheels and pulleys of access to the Executive System. This is a substantive claim, one that is distinct from the claims that phenomenal consciousness is *correlated* with that information-processing function, or that phenomenal consciousness should be *identified* with that information-processing function. The idea is that phenomenal consciousness is distinct (at least conceptually) from that information-processing function but is part of its implementation.

Farah (1994) criticizes this model on the ground that we don't observe patients whose blindsight-like performance is up to the standard of normal vision. Blindsight and its analogs are always degraded in discriminatory capacity. Her assumption seems to be that if there is a phenomenal consciousness module, it could simply be bypassed without decrement in performance; and the fact that this is not observed is taken as reason to reject the phenomenal consciousness module. This assumption would have to stem from a belief that phenomenal consciousness *doesn't do any information processing* (except, I guess, for determining reports of phenomenal consciousness). But why assume that? For example, phenomenal consciousness might be like the water in a hydraulic computer. You don't expect the computer to work normally without the water. Even if there could be an electrical computer that is isomorphic to the hydraulic computer but works without water, one should not conclude that the water in the hydraulic system does nothing. I will return to this issue later.

One reason that many philosophers would hate Cartesian modularist models is that they may be regarded as licensing the possibility of "zombies," creatures that have information processing that is the same as ours but no phenomenal consciousness. If the phenomenal consciousness module could be replaced by a device that had the same information-processing effects on the rest of the system, but without phenomenal consciousness, the result would be a zombie. My view is that we presently know so little about the scientific nature of phenomenal consciousness and its function that we cannot judge whether the same function could be performed by an ersatz phenomenal consciousness module – that is, whether such a module could inject its representations with ersatz conscious content that would affect information processing the same way as real conscious content.

The information-processing function of phenomenal consciousness in Schacter's model is the ground of the concept of consciousness that I will mainly be contrasting with phenomenal consciousness, what I call "access-consciousness." A perceptual state is access-conscious, roughly speaking, if its content – what is represented by the perceptual state – is processed via that information-processing function, that is, if its content gets to the Executive System, whereby it can be used to control reasoning and behavior.

Schacter's model is useful for my purposes both because it can be used to illustrate the contrast between phenomenal and access-consciousness, and because it allows us to see one possible explanation of the "covert knowledge" syndromes just described. This explanation (and also Schacter's model) are certainly incomplete and no doubt oversimplified at best, but it is nonetheless useful to see the outlines of how an account might go. In addition, there is an association between Schacter's model and the target reasoning – though as we shall see there is another processing model that perhaps better embodies the target reasoning.

Consider a blindsight patient who has just had a vertical line displayed in his blind field. "What did you see?" "Nothing," says the patient. "Take a guess between a vertical and a horizontal line," says the experimenter. "Vertical," says the patient, correctly. Here's a possible explanation of what happened. One of the modules is specialized for spatial information; it has some information about the verticality of the stimulus. The pathways between this specialized module and the phenomenal consciousness system have been damaged, creating the "blind field," so the patient has no phenomenally conscious experience of the line, and hence his Executive System has no information about whether the line is vertical or horizontal. The specialized module has a direct connection to the response system, however, so when the subject is given a binary choice, the specialized module can somehow directly affect the response. Similarly, there is a specialized module for face information, which can have some information about the face that has been presented to a prosopagnosic. If the prosopagnosia is caused by damage in the link between the face module and the phenomenal consciousness system, that prevents the face information from being phenomenally conscious, and without phenomenal consciousness the Executive System does not get the information about the face. When the prosopagnosic makes a guess between "Reagan" and "Bush," the face module somehow directly controls the response. (It is assumed that the face module has information about people – for example, their names – linked to representations of their faces.) It is interesting that the patients who do best in these experiments are the ones judged to be the most "passive" (Marcel 1983, pp. 197–237; Weiskrantz 1988). One can speculate that in a laid-back subject, the Executive System does not try out a guessing strategy, so peripheral systems are more likely to affect the response.

Alexia is a neurological syndrome whose victims can no longer read a word "at a glance," but can only puzzle out what word they have seen at a rate of, say, one second per letter. Nonetheless, these subjects often show various kinds of understanding of the meanings of words that have been flashed far too briefly for them to read in their laborious way. The idea again is that one of the modules is specialized for lexical information and has information about words the subject cannot consciously read. This information in some way affects responses. Landis et al. (1980) report that one such patient actually became worse at "guesses" having to do with the meanings of "unread" words as his explicit reading ability improved (Young & de Haan 1993). Again, perhaps once the Executive System has more information it "takes over," preventing peripheral systems from controlling responses. Coslett and Saffran (1994) report that alexics did worse at "guessing" words when given longer exposure to them. An exposure of 250 msec. was better than an exposure of 2 sec. Again, longer exposures may give the Executive System a chance to try to read letter by letter. Schacter's model and the explanations I have just sketched are highly speculative; my purposes in appealing to them are heuristic.

3. Two concepts of consciousness

First, consider phenomenal consciousness, or P-consciousness, as I will call it. Let me acknowledge at the outset that I cannot define P-consciousness in any remotely noncircular way. I don't consider this an embarrassment. The history of reductive definitions in philosophy should lead one not to expect a reductive definition of anything. The best one can do for P-consciousness is in some respects worse than for many other concepts, though, because really all one can do is *point* to the phenomenon (cf. Goldman 1993a). Nonetheless, it is important to point properly. Searle, acknowledging that consciousness cannot be defined noncircularly, defines it as follows:

> By consciousness I simply mean those subjective states of awareness or sentience that begin when one wakes in the morning and continue throughout the period that one is awake until one falls into a dreamless sleep, into a coma, or dies or is otherwise, as they say, unconscious. (Searle 1990; there is a much longer attempt along the same lines in Searle 1992, p. 83ff.)

I will argue that this sort of pointing is flawed, because it points to too many things, too many different consciousnesses.

So how should we point to P-consciousness? One way is with rough synonyms. As I said, P-consciousness is experience. P-consciousness properties are experiential ones. P-conscious states are experiential, that is, a state is P-conscious if it has experiential properties. The totality of the experiential properties of a state are "what it is like" to have it. Moving from synonyms to examples, we have P-conscious states when we see, hear, smell, taste, and have pains. P-conscious properties include the experiential properties of sensations, feelings, and perceptions, but I would also include thoughts, desires, and emotions.[3] A feature of P-consciousness that is often missed is that differences in intentional content often make a P-conscious difference. What it is like to hear a sound as coming from the left differs from what it is like to hear a sound as coming from the right. P-consciousness is often representational (see Flanagan 1992, Chap. 4; Goldman 1993b; Jackendoff 1987; McGinn 1991, Chap. 2; van Gulick 1989.) So far, I don't take myself to have said anything terribly controversial. The controversial part is that I take P-conscious properties to be distinct from any cognitive, intentional, or functional property. (Cognitive = essentially involving thought; intentional properties = properties in virtue of which a representation or state is about something; functional properties = properties definable (for example) in terms of a computer program. See Searle 1983, on intentionality; see Block 1980; 1994, for better characterizations of a functional property.) Still, I am trying hard to limit the controversiality of my assumptions. Although I will be assuming that functionalism about P-consciousness is false, I will be pointing out that limited versions of many of the points I make can be acceptable to the functionalist.[4]

It is of course P-consciousness rather than access-consciousness or self-consciousness that has seemed such a scientific mystery. The magazine *Discover* (November 1992) devoted an issue to the ten great unanswered questions of science, such as What is Consciousness?; Does Chaos Rule the Cosmos?; and How Big is the Universe? – The topic was P-consciousness, not, for example, self-consciousness.

By way of homing in on P-consciousness, it is useful to appeal to what may be a contingent property of it, namely,

the famous "explanatory gap." To quote T. H. Huxley (1866), "How it is that anything so remarkable as a state of consciousness comes about as a result of irritating nervous tissue, is just as unaccountable as the appearance of Djin when Aladdin rubbed his lamp." Consider a famous neurophysiological theory of P-consciousness offered by Crick and Koch (1990), namely, that a synchronized 35-75 hertz neural oscillation in the sensory areas of the cortex is at the heart of P-consciousness. No one has produced the concepts that would allow us to explain why such oscillations might be the physiological basis of P-consciousness.

However, Crick and Koch have offered an account of how the 35-75 hertz oscillation might contribute to a solution to the "binding problem." Suppose one simultaneously sees a red square moving to the right and a blue circle moving to the left. Different areas of the visual cortex are differentially sensitive to color, shape, motion, and so on – so what binds together redness, squareness, and rightward motion? That is, why don't you see redness and blueness without seeing them as belonging with particular shapes and particular motions? And why aren't the colors normally seen as bound to the wrong shapes and motions? Representations of colors, shapes, and motions of a single object are supposed to involve oscillations that are in phase with one another but not with representations of other objects. But even if the oscillation hypothesis deals with the informational aspect of the binding problem (and there is some evidence against it), how does it explain *what it is like to see something as red in the first place* – or, for that matter, as square or as moving to the right? Why couldn't there be brains functionally or physiologically just like ours, including oscillation patterns, whose owners' experience was different from ours or who had no experience at all? (Note that I don't say that there *could be* such brains. I just want to know *why not*.) And why should it be a 35-75 hertz oscillation – as opposed to some other frequency – that underlies experience? If the synchronized neural oscillation idea pans out as a solution to the binding problem, no doubt there will be some answer to the question of why *those* frequencies – as opposed to say, 110 hertz – are involved. But will that explain why 110 hertz oscillations do not underlie experience? No one has a clue as to how to answer these questions.[5]

The explanatory gap in the case of P-consciousness contrasts with our relatively good understanding of cognition. We have two serious research programs into the nature of cognition, the classical "language of thought" paradigm, and the connectionist research program. Though no doubt there are many ideas missing in our understanding of cognition, we have no difficulty seeing how pursuing one or both of these research programs could lead to an adequate theoretical perspective on cognition. It is not easy, however, to see how current approaches to P-consciousness *could* yield an account of it. Indeed, what passes for research programs on consciousness just *is* a combination of cognitive psychology and explorations of neuropsychological syndromes that contain no theoretical perspective on what P-consciousness actually is.

I mentioned the explanatory gap partly by way of pointing at P-consciousness: *that* is the entity to which the mentioned explanatory gap applies. Perhaps this identification is contingent; at some time in the future, when we have the concepts to conceive of much more about the explanation of P-consciousness, there may be no explanatory gap to use in picking out P-consciousness (see McGinn, 1991, for a more pessimistic view).

What I have been saying about P-consciousness is of course controversial in a variety of ways, both for some advocates and some opponents of some notion of P-consciousness. I have tried to steer clear of certain controversies, for example, over inverted and absent qualia; over Jackson's (1986) Mary (the woman raised in a black and white room, learning all the physiological and functional facts about the brain and color vision, but nonetheless discovers a new fact when she goes outside the room for the first time and learns what it is like to see red); and even over Nagel's (1974) view that we cannot know what it is like to be a bat.[6] Even if you think that P-consciousness as I have described it is an incoherent notion, you may be able to agree with the main point of this article, that a great deal of misunderstanding arises as a result of confusing P-consciousness with something else. Not even the concept of what time it is now on the sun is so confused that it cannot itself be mistaken for something else.

4. Access-consciousness

I now turn to the nonphenomenal notion of consciousness that is most easily and dangerously conflated with P-consciousness: access-consciousness. A state is access-conscious (A-conscious) if, in virtue of one's having the state, a representation of its content is (1) inferentially promiscuous (Stich 1978), that is, poised for use as a premise in reasoning, (2) poised for rational control of action, and (3) poised for rational control of speech. (I will speak of both states and their contents as A-conscious.) These three conditions are together sufficient, but not all necessary. I regard (3) as not necessary (and not independent of the others), because I want to allow that nonlinguistic animals, for example chimps, have A-conscious states. I see A-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 A-consciousness.[7]

Although I make a firm distinction between A-consciousness and P-consciousness, I also want to insist that they interact. What perceptual information is being accessed can change figure to ground and vice versa, and a figure-ground switch can affect one's phenomenal state. For example, attending to the feel of the shirt on your neck – accessing those perceptual contents – switches what was in the background to the foreground, thereby changing one's phenomenal state (see Hill 1991, pp. 118–126; Searle 1992).

I will argue that A-consciousness plays a deep role in our ordinary "consciousness" talk and thought. I must admit at the outset, however, that this role allows for substantial indeterminacy in the concept itself. In addition, there are some loose ends in the characterization of the concept that cannot be tied up without deciding about certain controversial issues.[8] My purpose in making precise the A-consciousness/P-consciousness distinction is to reveal the fallacy in the target reasoning, which (in one form) says that because the blindsight patient lacks consciousness of stimuli in the blind field, he does not use information he actually has about these stimuli, so the

function of consciousness must be to harness information for use in guiding action. (Perhaps blindsight patients do not lack P-consciousness of these stimuli, but the target reasoning supposes they do, and it is independently plausible. Cowie & Stoerig 1992 point out that the removal of primary visual cortex in blindsight patients disrupts the Crick & Koch, 1990, 35-75 hertz oscillations. This suggests that the blindsight patient may lack P-consciousness of the stimuli.) Something else that is problematic in blindsight can be equally blamed for the patient's failure, namely, the machinery of A-consciousness. Of course, the missing P-consciousness may be responsible for the missing A-consciousness; no fallacy is involved in this hypothesis. Rather, the fallacy is in *sliding* from an obvious function of A-consciousness to a non-obvious function of P-consciousness. For that reason, I choose to adopt a notion of access according to which the blindsight patient's guesses don't count as access. There is no right or wrong here. Access comes in various degrees and kinds, and my choice here is mainly determined by the needs of the argument. (I also happen to think that the notion I characterize is more or less the one that plays a big role in our thought, but that will not be a factor in my argument.)

There are three main differences between P-consciousness and A-consciousness. The first point, put crudely, is that P-conscious content is phenomenal, whereas A-conscious content is representational. It is of the essence of A-conscious content to play a role in reasoning, and only representational content can figure in reasoning. Many phenomenal contents are *also* representational, however, so it would be better to say that it is in virtue of its phenomenal content or the phenomenal aspect of its content that a state is P-conscious, whereas it is in virtue of its representational content, or the representational aspect of its content, that a state is A-conscious.[9]

The last paragraph referred to P-conscious *content*. The P-conscious content of a state is the totality of the state's experiential properties, what it is like to be in that state. One can think of the P-conscious content of a state as the state's experiential "value" by analogy with the representational content as the state's representational "value." In my view, the content of an experience can be both P-conscious and A-conscious, the former in virtue of its phenomenal feel and the latter in virtue of its representational properties. A closely related point: A-conscious states are necessarily transitive: A-conscious states must always be states of consciousness *of*. P-conscious states, by contrast, sometimes are and sometimes are not transitive. P-consciousness, as such, is not consciousness *of*.

A second difference is that A-consciousness is a functional notion, so A-conscious content is system-relative: what makes a state A-conscious is what a representation of its content does in a system. P-consciousness is not a functional notion.[10] In terms of Schacter's model, content gets to be P-conscious because of what happens *inside* the P-consciousness module. But what makes content A-conscious is not something that could go on inside a module, but rather informational relations *among* modules. Content is A-conscious in virtue of (a representation with that content) reaching the Executive System, the system in charge of rational control of action and speech; to this extent we could regard the Executive System as the A-consciousness module; but to regard *anything* as an A-consciousness module is misleading, because what makes content A-conscious depends on what the Executive System is disposed to *do* with the representation.

A third difference is that there is such a thing as a P-conscious *type* or *kind* of state. For example, the feel of pain is a P-conscious type – every pain must have that feel. But any particular thought that is A-conscious at a given time could fail to be accessible at some other time, just as my car is accessible now but will not be so later when my wife has it. A state whose content is informationally promiscuous now may not be so later.

The paradigm P-conscious states are sensations, whereas the paradigm A-conscious states are "propositional attitude" states such as thoughts, beliefs, and desires, states with representational content expressed by "that" clauses (e.g., the thought that grass is green.) As noted, however, thoughts are often P-conscious and perceptual experiences often have representational content. For example, a perceptual experience may have the representational content *that there is a red square in front of me*. Even pain typically has some kind of representational content. Pains often represent something (the cause of the pain? the pain itself?) as somewhere (in the leg). A number of philosophers have taken the view that the content of pain is *entirely* representational (see Dretske 1993; Shoemaker 1944; Tye, in press b). I don't agree with this view, so I certainly don't want to rely on it here, but I also don't want to suggest that the existence of cases of P-consciousness without A-consciousness is a trivial consequence of an idiosyncratic set of definitions. To the extent that representationalism of the sort just mentioned is plausible, one can regard a pain as A-conscious if its representational content is inferentially promiscuous, and so on. Alternatively, we could take the A-conscious content of pain to consist in the content that one has a pain or that one has a state with a certain phenomenal content.[11]

There is a familiar distinction, alluded to above, between "consciousness" in the sense in which we speak of a conscious state (intransitive consciousness) and consciousness *of* something (transitive consciousness; see, e.g., Rosenthal 1986. Humphrey [1992] mentions that the intransitive usage is much more recent, only 200 years old). It is easy to fall into an identification of P-consciousness with intransitive consciousness and a corresponding identification of access-consciousness with transitive consciousness. Such an identification is oversimplified. As mentioned earlier, P-conscious contents can be representational. Consider a perceptual state of seeing a square. This state has a P-conscious content that represents something, a square, and thus it is a state of P-consciousness *of* the square. It is a state of P-consciousness of the square even if it doesn't represent the square as a square, as would be the case if the perceptual state is a state of an animal that doesn't have the concept of a square. Since there can be P-consciousness *of* something, P-consciousness is not to be identified with intransitive consciousness.

Here is a second reason why the transitive/intransitive distinction cannot be identified with the P-consciousness/A-consciousness distinction: The *of*-ness required for transitivity does not guarantee that a content will be utilizable by a *consuming* system at the level required for A-consciousness. For example, a perceptual state

of a brain-damaged creature might be a state of P-consciousness of, say, motion, even though connections to reasoning and rational control of action are damaged so that the state is not A-conscious. In sum, P-consciousness can be consciousness of, and consciousness of need not be A-consciousness.[12]

Those who are uncomfortable about P-consciousness should pay close attention to A-consciousness, because it is a good candidate for a reductionist identification with P-consciousness.[13]

4.1. A-consciousness without P-consciousness

The main point of this target article is that these two concepts of consciousness are easily confused, so it will pay us to consider conceptually possible cases of one without the other. Actual cases will be more controversial.

As an example of A-consciousness without P-consciousness, imagine a full-fledged phenomenal zombie, say, a robot computationally identical to a person, but one whose silicon brain does not support P-consciousness. I think such cases are conceptually possible, but this is very controversial, and I am trying to avoid controversy (see Shoemaker 1975; 1981a).

There is a less controversial kind of case, however – that is a very limited sort of partial zombie. Consider the blindsight patient who "guesses" that there is an X rather than an O in his blind field. Temporarily taking his word for it, I am assuming that he has no P-consciousness of the X. As mentioned, I am following the target reasoning here, but my own argument does not depend on this assumption. I am certainly *not* assuming that lack of A-consciousness guarantees lack of P-consciousness – that is, I am not assuming that if you don't say it you haven't got it.

The blindsight patient also has no X representing A-consciousness content, because although the information that there is an X affects his "guess," it is not available as a premise in reasoning (until he has the quite distinct state of hearing and believing his own guess), or for rational control of action or speech. Recall Marcel's (1986) point that the thirsty blindsight patient would not reach for a glass of water in the blind field. So the blindsight patient's perceptual or quasi-perceptual state is unconscious in the phenomenal *and* access senses (*and* in the monitoring senses to be discussed later).

Now imagine something that may not exist, what we might call *superblindsight*. A real blindsight patient can only guess when given a choice from a small set of alternatives (X/O; horizontal/vertical, etc.). But suppose – contrary to fact apparently – that a blindsight patient could be trained to prompt himself at will, guessing what is in the blind field without being told to guess. The superblindsighter spontaneously says, "Now I know there is a horizontal line in my blind field even though I don't actually see it." Visual information from his blind field simply pops into his thoughts in the way that solutions to problems we've been worrying about pop into our thoughts, or in the way some people just know the time or which way is North without having any perceptual experience of it. The superblindsighter himself contrasts what it is like to know visually about an X in his blind field and an X in his sighted field. There is something it is like to experience the latter, but not the former, he says. It is the difference between *just knowing* and knowing via a visual experience. Let us take his word for it; here is the point: the content that there is an X in his visual field is A-conscious but not P-conscious. The superblindsight case is a very limited partial zombie.[14]

Of course, the superblindsighter has a thought that there is an X in his blind field that is *both* A-conscious and P-conscious. I am not talking about the thought, however, but about the state of his perceptual system that gives rise to the thought. It is this state that is A-conscious without being P-conscious.[15]

Is there actually such a thing as superblindsight? Humphrey (1992) describes a monkey (Helen) who despite near-total loss of the visual cortex could nonetheless act in a somewhat normal way (as if seeing) in certain circumstances, without any "prompting." One reason to doubt that Helen is a case of superblindsight is that Helen may be a case of sight. There was some visual cortex left, and the situations in which she showed unprompted visual discrimination were natural ones in which there was no control of where the stimuli engaged her retina. Another possibility mentioned by Cowie and Stoerig (1992, attributed to an unpublished paper by Humphrey) is that there were P-conscious sensory events, though perhaps auditory in nature. Helen appeared to confuse brief tones with visual stimuli. Cowie and Stoerig propose a number of ways of getting out of monkeys information that is close to what we get out of blindsighted humans. Weiskrantz (1992) mentions that a patient GY sometimes knows there is a stimulus (though not what it is) while claiming to see nothing. GY also seems to be having some kind of P-conscious sensation, however (see Cowie & Stoerig 1992).

The (apparent) nonexistence of superblindsight is a striking fact, one that a number of writers have noticed. Indeed, it is the basis for the target reasoning. After all, what Marcel was in effect pointing out was that the blindsight patients, in not reaching for a glass of water, are not superblindsighters. Farah (1994) notes that blindsight (and blind perception generally) turns out always to be degraded. In other words, blind perception is never superblind perception.[16]

I don't know whether there are any actual cases of A-consciousness without P-consciousness, but I hope I have illustrated their conceptual possibility.

4.2. P-consciousness without A-consciousness

Consider an animal you are happy to think of as having P-consciousness, for which brain damage has destroyed centers of reasoning and rational control of action, thus preventing A-consciousness. It certainly seems *conceptually possible* that the neural bases of P-consciousness systems and A-consciousness systems are distinct; if so, then it is possible, at least conceptually, for one to be damaged while the other is working well. Evidence has been accumulating for 25 years that the primate visual system has distinct dorsal and ventral subsystems. Though there is much disagreement about the specializations of the two systems, it does appear that much of the information in the ventral system is much more closely connected to P-consciousness than that in the dorsal system (Goodale & Milner 1992). So it may actually be possible to damage A-consciousness without P-consciousness and vice versa.[17]

One might suppose (Rey 1983; 1988; White 1987) that some of our own subsystems – say, each of the hemispheres of the brain – could themselves be separately P-conscious. [See Puccetti, "The Case for Mental Duality" 4(1) 1981.] Some of these subsystems might also be A-conscious, but other subsystems might not have enough machinery for reasoning or reporting or rational control of action to allow their P-conscious states to be A-conscious; so if those states are not accessible to another system that does have adequate machinery, they will be P-conscious but not A-conscious.

Here is another reason to believe in P-consciousness without A-consciousness: suppose you are engaged in intense conversation when suddenly at noon you realize that right outside your window there is – and has been for some time – a deafening pneumatic drill digging up the street. You were aware of the noise all along, but only at noon are you *consciously* aware of it. That is, you were P-conscious of the noise all along, but at noon you are both P-conscious *and* A-conscious of it. Of course, there is a very similar string of events in which the crucial event at noon is a bit more intellectual. In this alternative scenario, at noon you realize not just that there is and has been a noise, but also that *you are now and have been experiencing* the noise. In this alternative scenario, you get "higher order thought" as well as A-consciousness at noon. So, on the first scenario, the belief that is acquired at noon is that there is and has been a noise, and on the second scenario, the beliefs that are acquired at noon are the first one plus the belief that you are and have been experiencing the noise. But it is the first scenario, not the second, that interests me, for it is a pure case of P-consciousness without A-consciousness. Note that this case involves a natural use of "conscious" and "aware" for A-consciousness and P-consciousness, respectively. "Conscious" and "aware" are more or less synonymous, so calling the initial P-consciousness "awareness" makes it natural to call the later P-consciousness plus A-consciousness "conscious awareness." Of course I rely here on introspection, but when it comes to P-consciousness, introspection is an important source of insight.[18] This case of P-consciousness without A-consciousness exploits what William James (1890) called "secondary consciousness," a category in which he meant to include cases of P-consciousness without attention.[19]

I have found that the argument of the last paragraph makes those who are mistrustful of introspection uncomfortable. I agree that introspection is not the last word, but it is the first word, when it comes to P-consciousness. The example shows the conceptual distinctness of P-consciousness from A-consciousness, and it also puts the burden of proof on anyone who would argue that as a matter of empirical fact they come to the same thing.

Different concepts of consciousness give rise to different types of *zombie*. We have already encountered the phenomenal zombies that appear in science-fiction and philosophers' examples – the familiar computers and robots that think but don't feel. Their states are A-conscious, but not P-conscious. However, our culture also acknowledges the concept of voodoo zombies and zombies in "Night of the Living Dead." If we found that voodoo zombies are cognitively or affectively diminished – say, without will – rather than phenomenally diminished, we would not decide that they were not zombies after all. And on seeing the next installment in the "Living Dead" series, we would not feel that our concept of a zombie had been toyed with if it turned out that there is something it is like for these zombies to eat their relatives (They say "Yumm!"). No doubt we have no very well-formed zombie-concept, but the considerations just mentioned motivate the view that a zombie is something that is mentally dead in one respect or another, and the different respects give rise to different zombies.

Akins (1993) has argued against the distinction between a phenomenal and a representational aspect of experience. She asks one to look around one's office, noting what it is like to have that experience. Then she challenges one to imagine that "a bat's consciousness is just like that –the feel of the scene is exactly the same – except, of course, all those visual sensations mean something quite different to the bat. They represent quite different properties. Imagine that!" She goes on to say, "The problem is that you cannot imagine that, no matter how hard you try" (p. 267). Of course, she is right that you cannot imagine that. But the explanation of this fact is not that there is no distinction between the P-conscious and representational aspects of experience. The explanation is that, as I said earlier, many representational differences themselves *make* a P-conscious difference. To repeat the example given earlier, what it is like to hear a sound as coming from the left is different from what it is like to hear a sound as coming from the right. Or suppose that you are taken to what appears to be a town from the Old West; then you are told that it is a backdrop for a film and that what appear to be buildings are mere fronts. This representational difference can make a difference in what the buildings look like to you. A visual experience *as of* a façade differs from a visual experience *as of* a building, even if the retinal image is the same. (Terminological note: In philosophers' jargon, a visual experience *as of* a building represents what is seen *as* a building.) Or consider the difference in what it is like to hear sounds in French before and after you have learned the language (McCullough 1993).

This just about completes my justification and explanation of the difference between P-consciousness and A-consciousness. One remaining objection, however, still requires comment. The contrast between P-consciousness and A-consciousness was in part based on the distinction between representational and phenomenal content, with P-conscious content phenomenal and A-conscious content representational. I said this equation was rough because many phenomenal contents are also representational. Some will object that phenomenal content just *is* a kind of representational content (Dretske, 1993, and Tye, in press, a; b, take this line; Shoemaker, 1994, has a more moderate version). The representational/phenomenal distinction is discussed by Jackson (1977), Shoemaker (1981b), and Peacocke (1983). My reply is, first, that phenomenal content need not be representational at all (my favorite example is the phenomenal content of orgasm). Second, suppose I have an auditory experience as of something overhead, and a simultaneous visual experience as of something overhead. I am imagining a case where one has an impression only of where something is without an impression of other features. For example, in the case of the visual experience, one catches a glimpse in peripheral vision of something overhead without any impression of a specific shape or color (so the difference

cannot be ascribed to further representational differences). The phenomenal contents of both experiences represent something as being overhead, but there is no common phenomenal quality of the experiences in virtue of which they have this representational commonality. Note that the point is not just that there is a representational overlap without a corresponding phenomenal overlap (as is said, for example, in Pendlebury 1992). That would be compatible with the following story (offered to me by Michael Tye): phenomenal content is just one kind of representational content, but these experiences overlap in nonphenomenal representational content. The point, rather, is that there is a modal difference that is not at all a matter of representation but rather a matter of how those modes of representation feel. The look and the sound are both *as of something overhead,* but the two phenomenal contents represent this via different phenomenal qualities.[20]

4.2.1. Self-consciousness. By this term I mean the possession of the concept of the self and the ability to use this concept in thinking about oneself. A number of higher primates show signs of recognizing themselves in mirrors. They display interest in correspondences between their own actions and the movements of their mirror images. By contrast, both monkeys and dogs treat their mirror images as strangers at first, slowly habituating. In one experiment, colored spots are painted on the foreheads and ears of anesthetized primates. When they awaken and look in the mirror, chimps between 7 and 15 years old usually try to wipe the spot off (Gallup 1982; Povinelli 1994). Monkeys do not do this. Human babies don't show similar behavior until the last half of their second year. Perhaps this is a test for self-consciousness. (Or perhaps it is only a test for understanding mirrors; but what is involved in understanding mirrors if not that it is oneself one is seeing?) Even if monkeys and dogs have no self-consciousness, however, no one should deny that they have P-conscious pains, or that there is something it is like for them to see their reflections in the mirror. P-conscious states often seem to have a "me-ishness" about them; the phenomenal content often represents the state as a "state of me." But this fact does not at all suggest that we can reduce P-consciousness to self-consciousness, since such "me-ishness" is the same in states whose P-conscious content is different. For example, the experience as of red is the same as the experience as of green in self-orientation, but the two states are different in phenomenal feel.[21]

4.2.2. Monitoring-consciousness. The idea of consciousness as some sort of internal monitoring takes many forms. One is that of some sort of inner perception. This could be a form of P-consciousness, namely, P-consciousness of one's own states or of the self. Another notion is often put in information-processing terms: internal scanning. A third, metacognitive notion is that of higher order thought: a conscious state in this sense is a state accompanied by a thought to the effect that one is in that state. The thought must be arrived at nonobservationally and noninferentially. Otherwise, as Rosenthal (1986) points out, the higher-order thought definition would yield the wrong result for the case in which I come to know about my anger by inferring it from my own behavior.[22] Given my liberal terminological policy, I have no objection to any of these notions as notions of consciousness. Where I balk is at attempts to identify P-consciousness with any of these cognitive notions.

To identify P-consciousness with internal scanning is just to grease the slide to eliminativism about P-consciousness. Indeed, as Rey (1983) has pointed out, ordinary laptop computers are capable of various types of self-scanning, but as he also points out, no one would think of a laptop computer as "conscious" (using the term in the ordinary way, without making any of the distinctions I have introduced). According to Rey, internal scanning is essential to consciousness, so he concludes that the concept of consciousness is incoherent. The problem here is the failure to make distinctions of the sort I have been making. Even if the laptop has "internal scanning consciousness," it nonetheless lacks P-consciousness.[23]

The concepts of consciousness that are the focus of this target article (P-consciousness and A-consciousness) differ in their logics from those just mentioned: self-consciousness and monitoring-consciousness. A distinction is often made between the sense of "conscious" in which a person or other creature is conscious and the sense in which a state of mind is a conscious state. What it is for there to be something it is like to be me, that is for me to be P-conscious, is for me to have one or more states that are P-conscious. If a person is in a dreamless sleep and then has a P-conscious pain, he is to that extent P-conscious. For P-consciousness, it is states that are primary; likewise for A-consciousness. If a state has the three properties mentioned earlier (inferential promiscuity, etc.) it is A-conscious, and one is A-conscious just in case one has an A-conscious state. In case of self-consciousness and reflective consciousness, however, creature consciousness is basic. For a pain to be reflectively conscious, for example, the person whose pain it is must have another state that is about that pain. And it is creatures who can think about themselves. It is not even clear what a self-conscious state would be.

Perhaps you are wondering why I am being so terminologically liberal, counting P-consciousness, A-consciousness, monitoring-consciousness, and self-consciousness all as types of consciousness. Oddly, I find that many critics wonder why I would count *phenomenal* consciousness as consciousness, whereas many others wonder why I would count *access-* or *monitoring-* or *self-*consciousness as consciousness. In fact two referees of this paper complained about my terminological liberalism, but for incompatible reasons. One said:

> While what he uses ["P-consciousness"] to refer to – the "what it is like" aspect of mentality – seems to me interesting and important. I suspect that the discussion of it under the heading "consciousness" is a source of confusion . . . he is right to distinguish access-consciousness (which is what I think deserves the name "consciousness") from this.

Another reviewer said: "I really still can't see why access is called . . . access-consciousness? Why isn't access just . . . a purely information processing (functionalist) analysis?" This is not a merely verbal disagreement. In my view, all of us, despite our explicit verbal preferences, have some tendency to use "conscious" and related words in both ways, and our failure to see this causes a good deal of difficulty in thinking about "consciousness." This point will be illustrated below.

I have been talking about different concepts of "consciousness" and I have also said that the concept of consciousness is a mongrel concept. Perhaps you are thinking that I should make up my mind. My view is that "consciousness" is actually an ambiguous word, though the ambiguity I have in mind is not one that I have found in any dictionary. The paper started with an analogy between "consciousness" and "velocity"; there is an important similarity. One important difference, however, is that in the case of "velocity," it is easy to get rid of the temptation to conflate the two senses, even though for many purposes the distinction is not very useful. With "consciousness," there is a tendency toward "now you see it, now you don't." The main reason for this is that P-consciousness presents itself to us in a way that makes it hard to imagine how a conscious state could fail to be accessible and self-reflective, so it is easy to fall into habits of thought that do not distinguish these concepts.

The chief alternative to the ambiguity hypothesis is that there is a single *cluster concept* of consciousness. For example, a prototypical religion involves belief in supernatural beings, sacred and profane objects, rituals, a moral code, religious feelings, prayer, a world view, an organization of life based on this world view, and a social group bound together by the previous items (Alston 1967). But for all of these items, there are actual or possible religions that lack them; for example, some forms of Buddhism do not involve belief in a supreme being, and Quakers have no sacred objects. It is convenient for us to use a concept of religion that binds together a number of disparate concepts whose referents are often found together.

The distinction between the ambiguity and cluster concept hypotheses can be drawn in a number of equally legitimate ways that classify some cases differently; there is some indeterminacy in the distinction. Some might even say that *velocity* is a cluster concept, because for many purposes it is convenient to group average and instantaneous velocity together. I favor drawing the distinction in terms of conflation: if there can be conflation, we have ambiguity. When one catches a glimpse of a car flashing by so quickly that it is a blur, calling it "fast" is plausibly calling it high in instantaneous velocity, since there seems no implicit relativization to a trip with a high average velocity. A similarly pure use in the case of "consciousness" is provided by the earlier science fiction example of the robot that is computationally like us even though it lacks consciousness. What it is supposed to lack is *P-consciousness*. Pure uses for one element of a cluster suggest the possibility of conflation.

To call *consciousness* a mongrel concept is to declare allegiance to the ambiguity theory, not the cluster theory. An ambiguous word often corresponds to an ambiguous mental representation, one that functions in thought as a unitary entity and thereby misleads. These are mongrels. I would also describe *velocity* and *degree of heat* (as used by the Florentine Experimenters of the seventeenth century) as mongrel concepts. Note the distinction between the claim that the concept of consciousness is a mongrel concept, a nonunitary concept – and the claim that consciousness is like dirt or cancer in not being a natural kind (Churchland 1983). The former is a claim about the concept, the latter is a claim about what the concept picks out. The former can be settled by reflection, the latter requires empirical investigation.

5. Conflations

Conflation of P-consciousness and A-consciousness is ubiquitous in the burgeoning literature on consciousness, especially in the literature on syndromes like blindsight. Nearly every article I read on the subject by philosophers and psychologists involves some confusion. For example, Baars (1988, p. 14) makes it abundantly clear that he is talking about P-consciousness. "What is a theory of consciousness a theory of? In the first instance . . . it is a theory of the nature of experience. The reader's private experience of *this* word, his or her mental image of yesterday's breakfast, or the feeling of a toothache – these are all contents of consciousness." Yet his theory is a "global workspace" model of A-consciousness. Shallice (1988a; 1988b) says he is giving an account of "phenomenal experience" but actually gives an information-processing theory of A-consciousness (his 1988b is about an "information-processing model of consciousness"). Mandler (1985) describes consciousness in P-conscious terms such as "phenomenal" and "experience" but gives a totally cognitive account appropriate to A-consciousness. Edelman's (1989) theory is also intended to explain P-consciousness, but it seems a theory of access-consciousness and self-consciousness (see Chalmers 1993). Kosslyn and Koenig (1992, pp. 431–33) say, "We will address here the everyday sense of the term ["consciousness"]; it refers to the phenomenology of experience, the feeling of red and so forth" (I am indebted to Michael Tye for calling this quotation to my attention). But then they give a "parity check" theory that seems more of a theory of monitoring-consciousness or A-consciousness.

One result of conflating P-consciousness with other types of consciousness is a tendency to regard as plausible ideas that should be seen as way out on a limb. For example, Johnson-Laird (1988, pp. 360–61) talks of consciousness, using terms like "subjective experience." He goes on to hypothesize that consciousness is a matter of building models of the self and models of the self building models of itself, and so on. This hypothesis has two strikes against it, as should be obvious if one is clear about the distinction between P-consciousness and self-consciousness. Dogs and babies may not build such complex models, but the burden of proof is surely on anyone who doubts that they have P-consciousness.

Another example: in a discussion of phenomena of implicit perception, Kihlstrom et al. (1992, p. 42) make it clear that the phenomena concern P-consciousness: "In the final analysis, consciousness is a phenomenal quality that may accompany perception." Yet they claim that self-consciousness is precisely what is lacking in implicit perception: "This connection to the self is just what appears to be lacking in the phenomena of implicit perception. . . . When contact occurs between the representation of the event – what might be called the fact node and the representation of oneself – what might be called the self node, the event comes into consciousness" (p. 42). But again, as we go down the phylogenetic scale we may well encounter creatures that are P-conscious but have no "self-node," and the same may be true of the very

young of our own species. What should be announced as a theory that conflicts with common sense, that P-consciousness arises from representing the self, can appear innocuous if one is not careful to make the distinctions among the consciousnesses.

Andrade (1993, p. 13) makes it clear that the concern is P-consciousness; for example, "Without consciousness, there is no pain. There may be tissue damage, and physiological responses to tissue damage, but there will not be the phenomenological experience of pain." Considering work on control by a central Executive System, Andrade (correctly, I think) takes the dominant theories to "identify" consciousness with central executive control: "Current psychological theories identify consciousness with systems that coordinate lower-level information processing." But there are two very different paths to such an identification: (1) conflating P-consciousness with A-consciousness and theorizing about A-consciousness in terms of the systems Andrade mentions, (2) clearly distinguishing P-consciousness from A-consciousness and hypothesizing that the mechanisms that underlie the latter give rise to the former. I doubt that any objective reader of this literature will think that the hypothesis of path (2) is often very likely.

In the writings of some psychologists, the assimilation of P-consciousness to A-consciousness is a product of the (admirable) desire to be able to *measure* P-consciousness. Jacoby et al. (1992) assimilate P-consciousness to A-consciousness for that reason. Their subject matter is perception without "subjective experience, in normal perceivers, in conditions of divided attention or degraded presentations; in other words, perception without P-consciousness, often known as subliminal perception. Jacoby et al. note that it is very difficult to disentangle conscious perception from unconscious perception, because no one has conceived of an experimental paradigm that isolates one of these modes. "We avoid this problem," they say, "by inferring awareness ["subjective experience"] – from conscious control and defining unconscious influences as effects that cannot be controlled" (1992, p. 108). The effect of this procedure is to disallow by definition phenomenal events that have no effect on later mental processes and to type phenomenal events definitionally by appealing to judgments based on them. "Subjective experience," they say, "results from an attribution process in which mental events are interpreted in the context of current circumstances" (p. 112). I am reminded of an article I once read in the sociology of science that defined the quality of a scientific paper as the number of references to it in the literature. Operational definitions do harm if the result is measuring something else.

Schacter (1989) is explicit about what he means by "consciousness" (which he often calls "conscious awareness"), namely P-consciousness. He mentions that the sense he has in mind is that of "phenomenal awareness, . . . 'the running span of subjective experience'" (quoting Dimond 1976), and consciousness in his sense is repeatedly contrasted with information-processing notions. Nonetheless, in an effort to associate the "Conscious Awareness System" (what I call the phenomenal consciousness system in my labeling of his model in Figure 1) with the inferior parietal lobes, Schacter says that lesions in this area

> have also been associated with confusional states, which are characterized by disordered thought, severe disorientation, and a breakdown of selective attention – in short, a global disorder of conscious awareness. . . . Several lines of evidence indicate that lesions to certain regions of the parietal lobes can produce disorders of conscious awareness. First, global confusional states have been reported in right parietal patients. . . . Second, the syndrome of anosognosia – unawareness and denial of a neuropsychological deficit – is often associated with parietal damage. . . . Anosognosic patients . . . may be unaware of motor deficits . . . perceptual deficits . . . and complete unawareness can be observed even when the primary deficit is severe. (1989, p. 371)

Here, Schacter reverts to a use of "consciousness" and "awareness" in a variety of cognitive senses. Disordered thought, disorientation, and a breakdown of selective attention are not primarily disorders of P-consciousness, and anosognosia is primarily a defect in A-consciousness, not P-consciousness. Anosognosia is a neurological syndrome that involves an inability to acknowledge or have access to information about another neurological syndrome. A patient might have anosognosia for, say, his prosopagnosia while complaining incessantly about another deficit. Young (1994a) describes a woman who was a painter before becoming prosopagnosic. Looking at portraits she had painted, trying to figure out whom they represented, she laboriously determined the subject of each painting, reasoning out loud about the person's apparent age, sex, and any significant objects in the picture, plus her verbal memories of the portraits that she had painted. When the experimenter commented on her prosopagnosia, she said that she "had recognized them," and did not think that there was anything odd about her laborious reasoning.[24]

The crucial feature of anosognosia about prosopagnosia is that the patients' access to information about their own inability to recognize faces is in some way blocked. They cannot report this inability or reason about it or use information about it to control their actions. There may also be some defect of P-consciousness. Perhaps everyone looks familiar or, more likely, patients with prosopagnosia no longer have the ability to have visual feelings of familiarity for faces that are distinct from feelings of unfamiliarity. This is not crucial to the syndrome, however, as is shown by the fact that we confidently ascribe anosognosia on the basis of the patient's cognitive state – the lack of knowledge of the deficit – without knowing what defects of P-consciousness may or may not be involved. Furthermore, the same defects of P-consciousness could be present in a *non-anosognosic* prosopagnosic without discrediting the patient's status as non-anosognosic. One can imagine such a person saying, "Gosh, I don't recognize anyone – in fact, I no longer have a visual sense of the difference between familiar and unfamiliar faces." This would be prosopagnosia *without* anosognosia. To take anosognosia as primarily a defect of P-consciousness is a mistake.

I do not think these conflations cause any real problem in Schacter's theorizing, but as a general rule, if you want to get anywhere in theorizing about X you should have a good pretheoretical grip on the difference between X and things that are easily confused with it.

Dennett (1986; 1991) provides another example of the conflation of a number of concepts of consciousness (see

Block 1993, 1994). I will focus on Dennett's claim that consciousness is a cultural construction. He theorizes that "human consciousness (1) is too recent an innovation to be hard-wired into the innate machinery, and (2) is largely the product of cultural evolution that gets imparted to brains in early training" (1991, p. 219). Sometimes Dennett puts the point in terms of memes, which are ideas such as that of the wheel or the calendar; memes are the smallest cultural units that replicate themselves reliably, namely cultural analogs of genes. In these terms then, Dennett's claim is that "human consciousness is *itself* a huge complex of memes" (1991, p. 210). This view is connected with Dennett's idea that you can't have consciousness without having the concept of consciousness. He says that consciousness is like love and money in this regard, though in the case of the latter, what is required for one to have money is that *someone* have the concept of money (1986, p. 152; 1991, p. 24).

I think the reason Dennett says "largely" the product of cultural evolution is that he thinks of consciousness as the software that operates on genetically determined hardware that is the product of biological evolution. Though consciousness requires the concept of consciousness, with consciousness, as with love, there is a biological basis without which the software could not run.

Now I hope it is obvious that P-consciousness is not a cultural construction. Remember, we are talking about P-consciousness itself, not the concept of P-consciousness. The idea would be that perhaps there was a time when people genetically like us ate, drank, and had sex, but there was nothing it was like for them to do these things. Furthermore, each of us would have been like that if not for specific concepts we acquired from our culture in growing up. Ridiculous! Of course, culture *affects* P-consciousness; the wondrous experience of drinking a great wine takes training to develop. But culture affects feet too; people who have spent their lives going barefoot in the Himalayas have feet that differ from those of people who have worn tight shoes 18 hours a day. We mustn't confuse the idea that culture *influences* consciousness with the idea that it (largely) creates it.

What about A-consciousness? Could there have been a time when humans who were biologically the same as us never had the contents of their perceptions and thoughts poised for free use in reasoning or in rational control of action? Is this ability one that culture imparts to us as children? Could it be that until we acquired the concept of *poised for free use in reasoning or in rational control of action*, none of our perceptual contents were A-conscious? Again, there is no reason to take such an idea seriously. Very much lower animals are A-conscious, presumably without any such concept.

A-consciousness is as close as we get to the official view of consciousness in *Consciousness Explained* and in later writings (e.g., Dennett 1993). The official theory of Dennett (1991) is the Multiple Drafts Theory that there are distinct parallel tracks of representation vying for access to reasoning, verbalization, and behavior. This seems a theory of A-consciousness. Dennett (1993, p. 929) says, "Consciousness is cerebral celebrity – nothing more and nothing less. Those contents are conscious that persevere, that monopolize resources long enough to achieve certain typical and "symptomatic" effects – on memory, on the control of behavior, and so forth." Could it be anything other than a biological fact about humans that some brain representations persevere enough to affect memory, control behavior, and so forth? So on the closest thing to Dennett's official kind of consciousness, the thesis (that consciousness is a cultural construction) is no serious proposal.

What about monitoring-consciousness? No doubt there was a time when people were less introspective than some of us are now, but is there any evidence that there was a time when people genetically like us had no capacity to think or express the thought that one's leg hurts? To be able to think this thought involves being able to think that one's leg hurts, and that is a higher-order thought of the sort that is a plausible candidate for monitoring-consciousness (Rosenthal 1986). Here for the first time we do enter the realm of actual empirical questions, but without some very powerful evidence for such a view there is no reason to give it any credence. Dennett gives us not the slightest hint of the kind of weird evidence we would need to begin to take this claim seriously, hence it would be a disservice so to interpret him.

What about self-consciousness? I mentioned Gallup's and Povinelli's "mark test" evidence (the chimp tries to wipe off a mark on its face seen in a mirror) that chimps are self-conscious. An experiment in this vein that Dennett (1991, p. 428) actually mentions, and mentions positively, is that a chimp can learn to get bananas through a hole in its cage by watching its arm on a closed-circuit TV whose camera is some distance away (Menzel et al. 1985). The literature on the topic of animal self-consciousness is full of controversy (see Anderson 1993; R. W. Byrne 1993; de Lannoy 1993; Gallup & Povinelli 1993; Heyes 1993; Mitchell 1993a; 1993b). Hauser et al. (forthcoming) give strong reason to believe that the controversy over the mark test derives simply from the use of a not very salient mark. They find strong evidence of self-recognition in tiny monkeys which have tufts that are dyed electric colors. I have no space to do justice to the issues, so I will have to make do with just stating my view: I think the evidence in favor of minimal self-consciousness on the part of chimps is overwhelming. By minimal self-consciousness I mean the ability to think about oneself in some way or other – that is, no particular way is required. Many of the criticisms of the mark test actually presuppose that the chimp is self-conscious in this minimal sense. For example, it is often suggested that chimps that pass the mark test think they are seeing another chimp (e.g., Heyes 1993), and since the chimp in the mirror has a mark on its forehead, the chimps who are looking wonder whether they do too. But for me to wonder whether *I* have a mark on my forehead, I have to be able to think about myself. In any case, Dennett does not get into these issues (except, as mentioned, to favor chimp self-consciousness), so he does not appear to have this interpretation in mind.

So far, according to all the concepts of consciousness I have mentioned, Dennett's thesis turns out to be false. There is a trend, however: of the concepts I considered, the first two made the thesis silly, even applied to animals. In the case of monitoring-consciousness, there is a real empirical issue in the case of many types of mammals, so it

is not completely silly to wonder about whether people have it. Only in the last case, self-consciousness, is there a serious issue about whether chimps are conscious, and that suggests we might get a notion of self-consciousness that requires some cultural elements. In recent years, the idea of the self as a federation of somewhat autonomous agencies has become popular, and for good reason. Nagel (1971) made a good case on the basis of split-brain data, and Gazzaniga and LeDoux (1978) and Gazzaniga (1985) have added additional considerations that have some plausibility. Dennett has a chapter about the self at the end of the book that gives similar arguments. Maybe what Dennett is saying is that nonfederal self-consciousness, the ability to think of oneself as not being such a federation (or more simply, federal-self-consciousness) is a cultural construction.

But now we have moved from falsity to banality. I am not saying the proposal that we are federations is banal. What is banal is that having and applying a sophisticated concept such as being a federation (or not being a federation) requires a cultural construction. Consider chairman self-consciousness, the ability to think of oneself as chairman, as the one who guides the department, the one who has the keys, and so on. It is a banality that a cultural construction is required for a person to think of himself in that way, and the corresponding point about federal self-consciousness is similarly banal.

The great oddity of Dennett's discussion is that throughout he gives the impression that his theory is about P-consciousness, though he concedes that what he says about it conflicts with our normal way of thinking about consciousness. This comes out especially strongly in an extended discussion of Jaynes's (1976) book, which he credits with a version of the view I am discussing, namely, that consciousness is a cultural construction that requires its own concept. Dennett says:

> Perhaps this is an autobiographical confession: I am rather fond of his [Jaynes's] way of using these terms; ["consciousness," "mind," and other mental terms] I rather like his way of carving up consciousness. It is in fact very similar to the way that I independently decided to carve up consciousness some years ago.
>
> So what then is the project? The project is, in one sense, very simple and very familiar. It is bridging what he calls the "awesome chasm" between mere inert matter and the inwardness, as he puts it, of a conscious being. Consider the awesome chasm between a brick and a bricklayer. There isn't, in Thomas Nagel's (1974) famous phrase, anything that it is like to be a brick. But there is something that it is like to be a bricklayer, and we want to know what the conditions were under which there happened to come to be entities that it was like something to be in this rather special sense. That is the story, the developmental, evolutionary, historical story, that Jaynes sets out to tell. (1986, p. 149)

In sum, Dennett's thesis is trivially false if it is construed to be about P-consciousness, as advertised. It is also false if taken to be about A-consciousness, which is Dennett's official view of consciousness. But if taken to be about a highly sophisticated version of self-consciousness, it is banal. That is what can happen if you talk about consciousness without making the sorts of distinctions I am urging.

6. The fallacy of the target reasoning

We now come to the denouement of the paper, the application of the P-consciousness/A-consciousness distinction to the fallacy of the target reasoning. Let me begin with the Penfield/van Gulick/Searle reasoning. Searle (1992) adopts Penfield's (1975) claim that during petit mal seizures patients are "totally unconscious." Quoting Penfield at length, Searle describes three patients who, despite being "totally unconscious" continue walking or driving home or playing the piano, but in a mechanical way. Van Gulick (1989, p. 220) gives a briefer treatment, also quoting Penfield. He says, "The importance of conscious experience for the construction and control of action plans is nicely illustrated by the phenomenon of automatism associated with some petit mal epileptic seizures. In such cases, electrical disorder leads to a loss of function in the higher brain stem. . . . As a result the patient suffers a loss of conscious experience in the phenomenal sense although he can continue to react selectively to environmental stimuli." Because van Gulick's treatment is more equivocal and less detailed, and because Searle also comments on my accusations of conflating A-consciousness with P-consciousness, I will focus on Searle. Searle says:

> The epileptic seizure rendered the patient *totally unconscious*, yet the patient continued to exhibit what would normally be called goal-directed behavior. . . . In all these cases, we have complex forms of apparently goal-directed behavior without any consciousness. Now why could all behavior not be like that? Notice that in the cases, the patients were performing types of actions that were habitual, routine and memorized . . . normal, human, conscious behavior has a degree of flexibility and creativity that is absent from the Penfield cases of the unconscious driver and the unconscious pianist. *Consciousness adds powers of discrimination and flexibility* even to memorized routine activities. . . . One of the evolutionary advantages conferred on us by consciousness is the much greater *flexibility, sensitivity,* and *creativity* we derive from being conscious. (1992, pp. 108–9, italics mine)

Searle's reasoning is that consciousness is missing, and with it flexibility, sensitivity, and creativity, so this is an indication that a function of consciousness is to add these qualities. Now it is completely clear that the concept of consciousness invoked by both Searle and van Gulick is P-consciousness. Van Gulick speaks of "conscious experience in the phenomenal sense," and Searle criticizes me for supposing that there is a legitimate use of "conscious" to mean A-conscious: "Some philosophers (e.g., Block, "Two Concepts of Consciousness") claim that there is a sense of this word that implies no sentience whatever, a sense in which a total zombie could be 'conscious.' I know of no such sense, but in any case, that is not the sense in which I am using the word" (Searle 1992, p. 84). But neither Searle nor van Gulick nor Penfield give any reason to believe that P-consciousness is missing or even diminished in the epileptics they describe. The piano player, the walker, and the driver don't cope with new situations very well, but they do show every sign of *normal sensation*. For example, Searle, quoting Penfield, describes the epileptic walker as "thread[ing] his way" through the crowd. Doesn't he *see* the obstacles he

avoids? Suppose he gets home by turning right at a red wall. Isn't there something it is like for him to see the red wall – and isn't it different from what it is like for him to see a green wall? Searle gives no reason to think the answer is no. Because of the very inflexibility and lack of creativity of the behavior they exhibit, it is the *thought processes* of these patients (including A-consciousness) that are most obviously deficient; no reason at all is given to think that their P-conscious states lack vivacity or intensity. Of course, I don't claim to know what it is really like for these epileptics; my point is rather that for the argument for the function of P-consciousness to have any force, a case would have to be made that P-consciousness is actually missing, or at least diminished. Searle argues: P-consciousness is missing; so is creativity; therefore the former lack explains the latter lack. But no support at all is given for the first premise, and as we shall see, it is no stretch to suppose that what has gone wrong is that the ordinary mongrel notion of consciousness is being used; it wraps P-consciousness and A-consciousness together, and so an obvious function of A-consciousness is illicitly transferred to P-consciousness.

This difficulty in the reasoning is highlighted if we assume Schacter's model. In terms of Schacter's model, there is no reason to doubt that the information from the epileptic's senses reaches the P-conscious module, but there is reason to doubt that the Executive System processes this information in the normal way. So there is reason to blame their inflexibility and lack of creativity on problems in the Executive System or the link between P-consciousness module and the Executive System.[25]

Searle and van Gulick base their arguments on Penfield's claim that a petit mal seizure "converts the individual into a mindless automaton" (Penfield 1975, p. 37). Indeed, Penfield repeatedly refers to these patients as "unconscious," "mindless," and as "automata." But what does Penfield mean? Searle and van Gulick assume that Penfield means lacking P-consciousness, since they adopt the idea that that is what the term means (although, as we shall see, Searle himself sometimes uses "consciousness" to mean A-consciousness). Attending to Penfield's account, we find the very shifting among different concepts of consciousness that I have described here, but the dominant theme by far involves thinking of the patients as cognitively rather than phenomenally deficient during petit mal seizures. Here is Penfield's summary of the description of the patients:

> In an attack of automatism the patient becomes suddenly unconscious, but, since other mechanisms in the brain continue to function, he changes into an automaton. He may wander about, confused and aimless. Or he may continue to carry out whatever purpose his mind was in the act of handing on to his automatic sensory-motor mechanism when the highest brain-mechanism went out of action. Or he follows a stereotyped, habitual pattern of behavior. In every case, however, the automaton can make few, if any decisions for which there has been no precedent. *He makes no record of a stream of consciousness.* Thus, he will have complete amnesia for the period of epileptic discharge. . . . In general, if new decisions are to be made, the automaton cannot make them. In such a circumstance, he may become completely unreasonable and uncontrollable and even dangerous. (1975, pp. 38–40)

In these passages, and throughout the book, the dominant theme in descriptions of these patients is one of deficits in thinking, planning, and decision making. No mention is made of any sensory or phenomenal deficit.[26]

My interpretation is supported by a consideration of Penfield's theoretical rationale for his claim that petit mal victims are unconscious. He distinguishes two brain mechanisms, "(a) the *mind's mechanism* (or highest brain mechanism); and (b) the *computer* (or automatic sensory-motor mechanism)" (p. 40, italics Penfield's). The mind's mechanism is most prominently mentioned in connection with planning and decision making, for example, "the highest brain mechanism is the mind's executive." When arguing that there is a soul that is connected to the mind's mechanism, he mentions only cognitive functions: he asks whether such a soul is improbable, and answers, "It is not so improbable, to my mind, as is the alternative expectation – that the highest brain mechanism should itself understand, and reason, and direct voluntary action, and decide where attention should be turned and what the computer must learn, and record, and reveal on demand" (p. 82). Penfield's soul is a cognitive soul.

By contrast, the computer is devoted to *sensory* and motor functions. Indeed, he emphasizes that the mind only has contact with sensory and motor areas of the cortex through controlling the computer, which itself has direct contact with the sensory and motor areas. Since it is the mind's mechanism that is knocked out in petit mal seizures, the sensory areas are intact in the "automaton."

Searle (1990b, p. 635) attempts (though of course he wouldn't accept this description) to use the idea of degrees of P-consciousness to substitute for A-consciousness. I will quote a chunk of what he says about this (the details of the context do not matter).

> By consciousness I simply mean those subjective states of awareness or sentience that begin when one wakes in the morning and continue throughout the period that one is awake until one falls into a dreamless sleep, into a coma, or dies or is otherwise, as they say, unconscious.

I quoted this passage earlier as an example of how a characterization of consciousness can go wrong by pointing to too many things. Searle means to be pointing to P-consciousness. But A-consciousness and P-consciousness normally occur together when one is awake, and both are normally absent in a coma and a dreamless sleep – so this characterization doesn't distinguish them.

> On my account, dreams are a form of consciousness, . . . though they are of less intensity than full blown waking alertness. Consciousness is an on/off switch: You are either conscious or not. Though once conscious, the system functions like a rheostat, and there can be an indefinite range of different degrees of consciousness, ranging from the drowsiness just before one falls asleep to the full blown complete alertness of the obsessive.

Degrees of P-consciousness are one thing, obsessive attentiveness is another – indeed the latter is a notion from the category of A-consciousness, not P-consciousness.

> There are lots of different degrees of consciousness, but door knobs, bits of chalk, and shingles are not conscious at all. . . . These points, it seems to me, are misunderstood by Block. He refers to what he calls an "access sense of consciousness." On my account there is no such sense. I believe that he . . .

> [confuses] what I would call peripheral consciousness or *inattentiveness* with total unconsciousness. It is true, for example, that when I am driving my car "on automatic pilot" I am not paying much attention to the details of the road and the traffic. But it is simply not true that I am totally unconscious of these phenomena. If I were, there would be a car crash. We need therefore to make a distinction between the *center of my attention, the focus of my consciousness* on the one hand, and the *periphery* on the other. . . . There are lots of phenomena right now of which I am peripherally conscious, for example the feel of the shirt on my neck, the touch of the computer keys at my finger tips, and so on. But as I use the notion, none of these is unconscious in the sense in which the secretion of enzymes in my stomach is unconscious. (All these quotations are from Searle, 1990b, p. 635; italics added)

The first thing to note is the contradiction. Earlier, I quoted Searle saying that a "totally unconscious" epileptic could nonetheless drive home. Here, he says that if a driver were totally unconscious, the car would crash. The sense of "conscious" in which the car would crash if the driver weren't conscious is *A-consciousness*, not P-consciousness. P-consciousness *all by itself* wouldn't keep the car from crashing – the P-conscious contents have to be put to use in rationally controlling the car, *which is an aspect of A-consciousness*. When Searle says the "totally unconscious" epileptic can nonetheless drive home, he is talking about P-consciousness; when he says the car would crash if the driver were totally unconscious, he is talking mainly about A-consciousness. Notice that it will do no good for Searle to say that in the last passage quoted he is talking about creature-consciousness rather than state-consciousness. What it is for a person to be P-unconscious is for his states (all or the relevant ones) to lack P-consciousness. Creature P-consciousness is parasitic on state P-consciousness. Also, it will do him no good to appeal to the "conscious"/"conscious-of" distinction. The epileptics were "totally unconscious" and therefore, since Searle has no official concept of A-consciousness, he must say the epileptics were totally unconscious *of* anything. If Searle allowed that someone who is totally unconscious can nonetheless be conscious *of* something, that would be a backhanded way of acknowledging my P/A distinction.

The upshot is that Searle finds himself drawn to using "consciousness" in the sense of A-consciousness, despite his official position that there is no such sense, and when he tries to use a notion of degrees of P-consciousness, he ends up talking about A-consciousness – or about both A-consciousness and P-consciousness wrapped together in the usual mongrel concept. Inattentiveness just *is* lack of A-consciousness (though it will have effects on P-consciousness). Thus, Searle may be right about the inattentive driver (note, the inattentive driver, not the petit mal case). When the inattentive driver stops at a red light, there is presumably something it is like for him to see the red light – the red light no doubt looks red in the usual way, that is, it appears as brightly and vividly to him as red normally does. Because he is thinking about something else, however, he may not be using this information very much in his reasoning nor is he using it to control his speech or action in any sophisticated way – that is, perhaps his A-consciousness of what he sees is diminished (of course, it cannot be totally gone or the car would crash). Alternatively, A-consciousness might be normal, and the driver's poor memory of the trip may just be due to failure to put contents that are both P-conscious and A-conscious into memory; my point is that to the extent that Searle's story is right about *any* kind of consciousness being diminished, it is right about A-consciousness, not P-consciousness.

Searle's talk of the center and the periphery is in the first instance about kinds of or degrees of access, not "degrees of phenomenality." You may recall that in introducing the A/P distinction, I used Searle's example of attending to the feel of the shirt on the back of one's neck. My point was that A- and P-consciousness interact: bringing something from the periphery to the center can affect one's phenomenal state. The attention makes the experience finer-grained, more intense (though a pain that is already intense need not become more intense when one attends to it). There is a phenomenal difference between figure and ground, although the perception of the colors of the ground can be just as intense as those of the figure, or so it seems to me. Access and phenomenality often interact, one bringing along the other – but that should not blind us to the difference. Although my complaint is partly verbal, there is more to it. For the end result of deploying a mongrel concept is wrong reasoning about a function of P-consciousness.

In a related form of reasoning, Flanagan (1992, pp. 142–45) discusses Luria's (1972) patient Zazetsky, a soldier who lost the memories of his "middle" past – between childhood and brain injury. The information about his past is represented in Zazetsky's brain, but it only comes out via "automatic writing." Flanagan says, "The saddest irony is that although each piece of Zazetsky's autobiography was consciously reappropriated by him each time he hit upon a veridical memory in writing, he himself was never able to fully reappropriate, to keep in clear and continuous view, to live with, the self he reconstructed in the thousand pages he wrote." Flanagan goes on to blame the difficulty on a defect of consciousness, and he means P-consciousness: "Zazetsky's conscious capacities are (partly) maimed. His dysfunction is rooted in certain defects of consciousness" (pp. 144–45). But Zazetsky's root problem appears to be a difficulty in A-consciousness, though that has an effect on self-consciousness and P-consciousness. The problem seems to be that the memories of the middle past are not accessible to him in the manner of his memories of childhood and the recent past. To the extent that he knows about the middle past, it is as a result of reading his automatic writing, and so he has the sort of access we have to a story about someone else. The root difficulty is segregation of information, and whatever P-conscious feelings of fragmentation he has can be taken to result from this segregation. Nothing in this case suggests a function of P-consciousness.

Let us now move to the line of thought mentioned at the outset about why the thirsty blindsight patient doesn't reach for the glass of water in the blind field.[27] The reasoning is that (1) consciousness is missing, and (2) information that the patient in some sense possesses is not used in reasoning, guiding action or reporting, hence (3) the function of consciousness must be somehow to allow information from the senses to be so used in guiding

action (Marcel 1986; 1988). Flanagan (1992) agrees with Marcel: "Conscious awareness of a water fountain to my right will lead me to drink from it if I am thirsty. But the thirsty blindsighted person will make no move towards the fountain unless pressed to do so. The inference to the best explanation is that conscious awareness of the environment facilitates semantic comprehension and adaptive motor actions in creatures like us." And: "Blindsighted patients never initiate activity toward the blindfield because they lack subjective awareness of things in that field" (Flanagan 1992, pp. 141–42; the same reasoning occurs in his 1991, p. 349). Van Gulick (1989, p. 220) agrees with Marcel, saying, "subjects never initiate on their own any actions informed by perceptions from the blindfield. The moral to be drawn from this is that information must normally be represented in phenomenal consciousness if it is to play any role in guiding voluntary action."

Schacter (1989) quotes Marcel approvingly, using this reasoning (about why the thirsty blindsight patient doesn't reach) to some extent in formulating the model of Figure 1. The P-consciousness module has the function of integrating information from the specialized modules, injecting them with P-conscious content, and of sending these contents to the system in charge of reasoning and rational control of action and reporting.

Baars (1988, p. 356) argues for eighteen different functions of consciousness on the same ground. He says that the argument for these functions is "that loss of consciousness – through habituation, automaticity, distraction, masking, anesthesia, and the like – inhibits or destroys the functions listed here."[28]

This is the fallacy: in the blindsight patient, both P-consciousness and A-consciousness of the glass of water are missing. There is an obvious explanation of why the patient doesn't reach for the glass in terms of the information about it not reaching mechanisms of reasoning and rational control of speech and action, the machinery of A-consciousness. (If we believe in an Executive System, we can explain why the blindsight patient does not reach for the water by appealing to the claim that the information about the water does not reach the Executive System.) More generally, A-consciousness and P-consciousness are almost always present or absent together, or rather this seems plausible. This is, after all, *why* they are folded together in a mongrel concept. A function of the mechanisms underlying A-consciousness is completely obvious. If information from the senses did not get to mechanisms of control of reasoning and of rational control of action and reporting, we would not be able to use our senses to guide our action and reporting. But it is a mistake to slide from a function of the machinery of A-consciousness to any function at all of P-consciousness.

Of course, it could be that the lack of P-consciousness is itself responsible for the lack of A-consciousness. If that is the argument in any of these cases, I do not say "fallacy." The idea that the lack of P-consciousness is responsible for the lack of A-consciousness is a bold hypothesis, not a fallacy. Recall, however, that there is some reason to ascribe the opposite view to the field as a whole. The discussion in section 5 of Baars, Shallice, Kosslyn and Koenig, Edelman, Johnson-Laird, Andrade, and Kihlstrom et al. suggested that to the extent that the different types of consciousness are distinguished from one another, it is often thought that P-consciousness is a product of (or is identical to) cognitive processing. In this climate of opinion, if P-consciousness and A-consciousness were clearly distinguished, and something like the opposite of the usual view of their relation advanced, we would expect some comment on this fact, something that does not appear in any of the works cited.

The fallacy, then, is jumping from the premise that "consciousness" is missing – without being clear about what kind of consciousness is missing – to the conclusion that P-consciousness has a certain function. If the distinction were seen clearly, the relevant possibilities could be reasoned about. Perhaps the lack of P-consciousness causes the lack of A-consciousness. Or perhaps the converse is the case: P-consciousness is somehow a product of A-consciousness, or both could be the result of something else. If the distinction were clearly made, these alternatives would come to the fore. The fallacy is failing to make the distinction, rendering the alternatives invisible.

Note that the claim that P-consciousness is missing in blindsight is just an assumption. I decided to take the blindsight patient's word for his lack of P-consciousness of stimuli in the blind field. Maybe this assumption is mistaken; but if it is, then the fallacy now under discussion reduces to the fallacy of the Searle-Penfield reasoning: if the assumption is wrong, if the blindsight patient *does* have P-consciousness of stimuli in the blind field, then *only* A-consciousness of the stimuli in the blind field is missing, so of course we cannot draw the aforementioned conclusion about the function of P-consciousness from blindsight.

I said at the outset that although there is a serious fallacy in the target reasoning, something important is also right about it: in blindsight, both A-consciousness and (I assume) P-consciousness are gone, just as in normal perception both are present. So blindsight is yet another case in which P-consciousness and A-consciousness are both present or both absent. In addition, as mentioned earlier, cases of A-consciousness without P-consciousness, such as my "superblindsight patient," do not appear to exist. Training of blindsight patients has produced a number of phenomena that look a bit like superblindsight, but each such lead I have pursued has failed. This suggests an intimate relation between A-consciousness and P-consciousness. Perhaps there is something about P-consciousness that greases the wheels of accessibility. Perhaps P-consciousness is like the liquid in a hydraulic computer, the means by which A-consciousness operates. Alternatively, perhaps P-consciousness is the gateway to mechanisms of access as in Schacter's (1989) model, in which case P-consciousness would have the function Marcel and the others mention. Or perhaps P-consciousness and A-consciousness amount to much the same thing empirically even though they differ conceptually, in which case P-consciousness would also have the aforementioned function. Perhaps the two are so intertwined that there is no empirical sense to the idea of one without the other.

Compare the model of Figure 1 (Schacter's model) with those of Figures 2 and 3. The model of Figure 2 is just like Schacter's model, except that the Executive System and the P-consciousness System are collapsed together. We

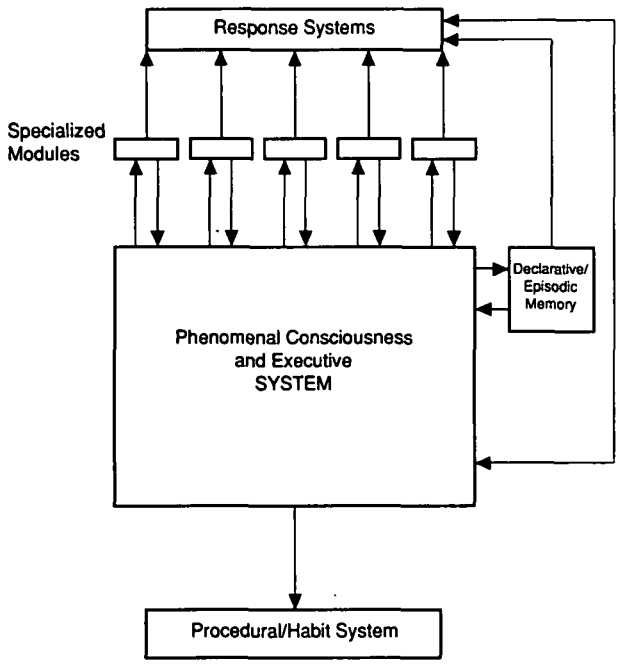

Figure 2. The Collapse Hypothesis, in which the Executive System and the Phenomenal Consciousness System are one and the same.

might call the hypothesis embodied in it the "collapse hypothesis."[29] Figure 3 is a variant on Schacter's model in which the Executive System module and the P-consciousness System module are reversed. Schacter's model clearly gives P-consciousness a function in controlling action. The model in Figure 3 clearly gives it no function. The model in Figure 2 can be interpreted in a variety of ways, some of which give P-consciousness a function, others of which do not. If P-consciousness is literally identical to some sort of information processing, then

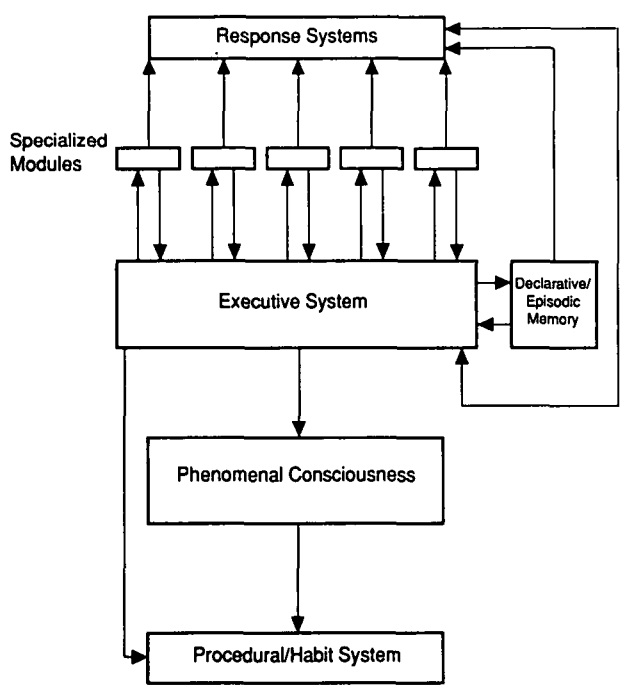

Figure 3. Epiphenomenalism: The Executive System and the Phenomenal Consciousness System transposed.

P-consciousness will have whatever function information processing has. But if P-consciousness is, say, a byproduct of and "supervenient on" (Kim 1995) certain kinds of information processing (something that could also be represented by the Fig. 3 model), then P-consciousness will in that respect at least have no function. What is right about the Marcel and others' reasoning is that some of the explanations for the phenomenon give P-consciousness a role; what is wrong with the reasoning is that one cannot immediately conclude from missing "consciousness" to P-consciousness having that role.

7. Can we distinguish among the models?

The point of my paper has been made, but having raised the issue of the three competing models, I can't resist making some suggestions for distinguishing among them. My approach is one that takes introspection seriously. Introspection has its well-known problems (Jacoby et al. 1992; Nisbett & Wilson 1977), but it would be foolish to conclude that we can afford to ignore our own experience.

One phenomenon that counts against the "collapse hypothesis" (Fig. 2) is the familiar phenomenon of the solution to a difficult problem just popping into P-consciousness. If the solution involves high-level thought, it must be accomplished by high-level reasoning processes that are not P-conscious (they aren't A-conscious either, since one can't report or base action on the intermediate stages of such reasoning). There will always be disputes about famous cases (e.g., Kekulé's discovery of the benzene ring in a dream), but we should not be skeptical about the idea that although the results of thought are both P-conscious and A-conscious, many intermediate stages are neither. If we assume that all high-level reasoning is done in the Executive System and that the model in Figure 2 is committed to all Executive processes being P-conscious, then this model is incompatible with solutions popping into P-consciousness. Of course, alternative forms of this model that do not make these assumptions may not make any such predictions.

If investigated further, a number of phenomena might lead to evidence for P-consciousness without A-consciousness and thus provide some reason to reject the Figure 2 model in favor of Schacter's model (Fig. 1). (I also think that these phenomena, if investigated further, might yield some reason to reject the third model in favor of Schacter's, but I cannot go into that here.) I repeat: the phenomena I am about to mention don't show anything on their own. I claim only that they are intriguing and deserve further attention.

One such phenomenon – perhaps it should be described as an idea rather than a phenomenon – is the hypothesis, already mentioned, that there could be animals whose P-conscious brain processes are intact, but whose A-conscious brain processes are not. Another is the case mentioned earlier of states of P-consciousness that go on for some time without attention and only become A-conscious with the focusing of attention (see also, Hill 1991).

Here is another phenomenon that may be relevant: Sperling (1960) flashed groups of letters (e.g., in 3 by 3 arrays) to subjects for brief periods (e.g., 50 milliseconds). Subjects typically report that they can see all or most of the letters, but they can report only about half of them.

Were the subjects right in saying that they could see all the letters? Sperling tried signaling the subjects with a tone. A high tone meant the subject was to report the top row, a medium tone indicated the middle row, and so on. If the tone was given immediately after the stimulus, the subjects could usually get all the letters in the row, whichever row was indicated. Once they had named those letters, however, they could usually name no others. This experiment is taken to indicate some sort of raw visual storage, the "icon." But the crucial issue here concerns what it is like to be a subject in this experiment. My own experience is that I see all or almost all the letters, and this is what other subjects describe (Baars 1988, p. 15). Focusing on one row allows me to report what letters are in that row (and only that row), and again this is what other subjects report. Here is the description I *think* is right and that I need for my case: I am P-conscious of all (or almost all – I will omit this qualification) the letters at once, that is, jointly, and not just as blurry or vague letters, but as specific letters (or at least specific shapes), but I don't have access to all of them jointly, all at once. (I would like to know whether others describe what it is like in this way, but the prejudice against introspection in psychology tends to keep answers to such questions from the journals.) One item of uncertainty about this phenomenon is that responses are serial; perhaps if some parallel form of response were available the results would be different. Ignoring that issue, the suggestion is that I am P-conscious, but not A-conscious, of all jointly.[30]

It may be that some evidence for P-consciousness without A-consciousness can be derived from phenomena involving hypnosis. Consider the phenomenon known as hypnotic analgesia, in which hypnosis blocks a patient's access to pain, say from an arm in cold water or from the dentist's drill. Pain must be P-conscious, it might be said, but access is blocked by the hypnosis, so perhaps this is P-without A-consciousness? But what reason is there to think that there is any pain at all in cases of hypnotic analgesia? One reason is that there are the normal psychophysiological indications that would be expected for pain of the sort that would be caused by the stimulus, such as an increase in heart rate and blood pressure (Kihlstrom et al. 1992; Melzack & Wall 1988). Another (weaker) indication is that reports of the pain can be elicited by Hilgard's "hidden observer" technique, in which the hypnotist tries to make contact with a "hidden part" of the person who knows about the pain (Hilgard 1986; Kihlstrom 1987). The hidden observer often describes the pain as excruciating and characterizes the time course of the pain in a way that fits the stimulation. Now there is no point in supposing that the pain is not P-conscious. If we believe the hidden observer, there is a pain that has phenomenal properties, and phenomenal properties could not be P-unconscious.

One way to think about this situation is that we have different persons sharing some part of one body. The pain is both P-conscious and A-conscious to the system that reports as the "hidden observer." This system doesn't control behavior, but since it can report, it may have that capacity under some circumstances. This reasoning is supported by the idea that if there is a P-conscious state in me to which I don't have access, then that state is not fully *mine*. A different way of thinking about what is going on is that there is one system, the person, who has some sort of dissociation problem. There is P-conscious pain in there somewhere, but the person does not have access to that pain, as shown by the failure to report it and by the failure to use the information to escape the pain. Only on the latter view would we have P- without A-consciousness.

Another phenomenon that could lead to evidence of P- without A-consciousness has to do with persistent reports over the years of P-conscious events under general anesthesia. Patients wake up and say that the operation hurt. (A number of doctors have told me that this is why doctors make a point of giving patients intravenous valium, a known amnestic, to wipe out memory of the pain. If the patients don't remember the pain, they will not sue.) General anesthesia is thought to suppress reasoning power in subanesthetic doses (Kihlstrom 1987; see also Ghoneim et al. 1984), thus plausibly interfering with Executive System function and A-consciousness, but I know of no reports that would suggest diminished P-consciousness. If P-consciousness were diminished much more than A-consciousness, for example, we could perhaps have analogs of superblindsight, although I am not sure how it would manifest itself. So if there are P-conscious states under general anesthesia, they may be states of more or less normal P-consciousness with diminished A-consciousness. In addition, Crick and Koch (1990) note that the aforementioned neural oscillations persist under light general anesthesia. Kihlstrom and Schacter (1990), Kihlstrom and Couture (1992), and Ghoneim and Block (1993) conclude that the phenomenon depends, in ways that are not understood, on details of the procedure and the anesthetic cocktail, but there do appear to be some methods that reveal some kind of memory for events under anesthesia. Bennett et al. (1988) gave patients under anesthesia suggestions to lift their index fingers at a special signal, whereas other patients were told to pull their ears. Control groups were given similar procedures without the suggestions. The result: the experimental group exhibited the designated actions at a much higher rate than the controls. Of course, even if these results hold up, they don't show that the patients *heard* the suggestions under anesthesia. Perhaps what took place was some sort of auditory analog of blindsight.

More pertinent for present purposes is a study conducted by a pair of American dentists on pilots during World War II (Melzack & Wall 1988; Nathan 1985). The unpressurized cabins of the time caused pilots to experience sensations that were described as a reactivation of the pain of previous dental work. The mechanism involved stimulation of the sinuses by the air pressure changes. The dentists coined the term "aerodontalgia" for this phenomenon. They were interested in the relation of aerodontalgia to general and local anesthesia, so they did dental work on patients using combinations of both. For example, they would put a patient under general anesthesia, locally anesthetize only one side of the mouth, and then drill or pull teeth on both sides. The result (with stimulation of the nasal mucosa in place of the sinus stimulation caused by pressure changes) was re-creation of dental pain only for work done under general anesthesia, not for local anesthesia, regardless of whether the local was used alone or together with general anesthesia. Of course, there may have been no pain at all under general anesthesia, only memories of the sort that would have been laid down if there had been pain. If you hate

pain, however, and if both general and local anesthesia make medical sense, would *you* take the chance on general anesthesia? At any rate, the tantalizing suggestion is that this is a case of P-consciousness without A-consciousness.

7.1. Conclusions

The form of the target reasoning discussed misses the distinction between P-consciousness and A-consciousness and thus jumps from the fact that consciousness in some sense or other is missing simultaneously with missing creativity or voluntary action to the conclusion that P-consciousness functions to promote the missing qualities in normal people. If we make the right distinctions, however, we can investigate nonfallaciously whether any such conclusion can be drawn. The model in Figure 2 would identify P-consciousness with A-consciousness, thus embodying an aspect of the target reasoning. This model is disconfirmed, however, by the apparent fact that much of our reasoning is neither P-conscious nor A-conscious. I have made additional suggestions for phenomena that may provide examples of P-consciousness without A-consciousness, further disconfirming the Figure 2 model.

My purpose in this target article has been to expose a confusion about consciousness. But in reasoning about it I raised the possibility that it may be possible to find out something about the function of P-consciousness without knowing very much about what it is. Indeed, learning something about the function of P-consciousness may help us in finding out what it is.

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NOTES

1. The phenomenon just mentioned is very similar to phenomena involving "subliminal perception," in which stimuli are degraded or presented very briefly. Holender (1986) harshly criticizes a variety of "subliminal perception" experiments, but the experimental paradigm just mentioned and many others are, in my judgment, free of the problems of certain other studies. Another such experimental paradigm is the familiar dichotic listening experiment in which subjects wear headphones that present different stimuli to different ears. If subjects are asked to pay attention to the stimuli in one ear, they can report only superficial features of the unattended stimuli, but the latter influences the interpretation of ambiguous sentences presented to the attended ear (see Lackner & Garrett 1973).

2. See, for example, Dennett and Kinsbourne's (1992b) scorn in response to my suggestion of Cartesian modularism. I should add that in Dennett's more recent writings, Cartesian materialism has tended to expand considerably from its original meaning of a literal place in the brain at which "it all comes together" for consciousness. In reply to Shoemaker (1993) and Tye (1993), both of whom echo Dennett's (1991) and Dennett and Kinsbourne's (1992a) admission that no one really is a proponent of Cartesian materialism, Dennett (1993) says "Indeed, if Tye and Shoemaker want to see a card-carrying Cartesian materialist, each may look in the mirror." (See also Jackson 1993.)

3. But what is it about thoughts that makes them P-conscious? One possibility is that it is just a series of mental images or subvocalizations that make thoughts P-conscious. Another possibility is that the contents themselves have a P-conscious aspect independently of their vehicles (see Lormand, forthcoming).

4. I say both that P-consciousness is not an intentional property and that intentional differences can make a P-conscious difference. My view is that although P-conscious content cannot be reduced to intentional content, P-conscious contents often have an intentional aspect, and also that P-conscious contents often represent in a primitive, nonintentional way. A perceptual experience can represent space as being filled in certain ways without representing the object perceived as falling under any concept. Thus, the experiences of a creature that does not possess the concept of a donut could represent space as being filled in a donutlike way (see Davies [1992, in press]; Peacocke [1992]; and finally Evans [1982] in which the distinction between conceptualized and nonconceptualized content is first introduced).

5. Levine (1983) coined the term "explanatory gap" and has elaborated the idea in interesting ways (see also Levine 1993). Van Gulick (1993) and Flanagan (1992, p. 59) note that the more we know about the connection between (say) hitting middle C on the piano and the resulting experience, the more we have in the way of hooks on which to hang something that could potentially close the explanatory gap. Some philosophers have adopted what might be called a deflationary attitude toward the explanatory gap (see Block 1994; A. Byrne 1993; Chalmers 1993; Jackson 1993; Levine 1993).

6. I know some will think that I invoked inverted and absent qualia a few paragraphs ago when I described the explanatory gap as involving the question of why a creature possessing a brain with a physiological and functional nature like ours couldn't have different experience or none at all. But the spirit of the question as I asked it allows for an answer that explains why such creatures cannot exist, and thus there is no presupposition that these are real possibilities. Levine (1983; 1993) stresses that the relevant modality is epistemic possibility.

7. Poised = ready and waiting. To be poised to attack is to be on the verge of attacking. What if an A-unconscious state causes an A-conscious state with the same content? Then it could be said that the first state must be A-conscious because it is in virtue of having that state that the content it shares with the other state satisfies the three conditions. So the state is A-unconscious by hypothesis, but A-conscious by my definition (I am indebted to Paul Horwich). What this case points to is a refinement needed in the notion of "in virtue of." One does not want to count the inferential promiscuity of a content as being in virtue of having a state if that state can only cause this inferential promiscuity via another state. I will not try to produce an analysis of "in virtue of" here.

8. I have been using the P-consciousness/A-consciousness distinction in my lectures for many years, but it only found its way into print in "Consciousness and Accessibility" (Block 1990b) and in Block 1991, 1992, and 1993. My claims about the distinction have been criticized by Searle (1990; 1992) and Flanagan (1992); and there is an illuminating discussion in Davies and Humphreys (1993). See also Levine's (1994) discussion of Flanagan's critique of the distinction. See also Kirk (1992) for an identification of P-consciousness with something like A-consciousness.

9. Some may say that only fully conceptualized content can play a role in reasoning, be reportable, and rationally control action. If so, then nonconceptualized content is not A-conscious.

10. However, I acknowledge the empirical possibility that the scientific nature of P-consciousness has something to do with information processing. We can ill afford to close off empirical

possibilities given the difficulty of solving the mystery of P-consciousness (cf. Loar 1990).

11. In my view, there are a number of problems with the first of these suggestions. One of them is that perhaps the representational content of pain is too primitive for a role in inference. Arguably, the representational content of pain is nonconceptualized. After all, dogs can have pain and one can reasonably wonder whether dogs have the relevant concepts at all. Davies and Humphreys (1993) discuss a related issue. Applying a suggestion of theirs about the higher-order thought notion of consciousness to A-consciousness, we could characterize A-consciousness of a state with nonconceptualized content as follows: such a state is A-conscious if, in virtue of one's having the state, its content *would be* inferentially promiscuous and available for rational control of action and speech if the subject were to have had the concepts required for that content to be a conceptualized content. The idea is to bypass the inferential disadvantage of nonconceptualized content by thinking of its accessibility counterfactually – in terms of the rational relations it would have if the subject were to have the relevant concepts (see Lormand, forthcoming, on the self-representing nature of pain).

12. Later in this paper I introduce the distinction between creature-consciousness and state-consciousness. In those terms, transitivity has to do primarily with creature-consciousness, whereas in the case of P-consciousness and A-consciousness, it is state-consciousness that is basic (see the discussion at the end of this section).

13. The distinction has some similarity to the sensation/perception distinction; I will not take the space to lay out the differences (see Humphrey, 1992, for an interesting discussion of the latter distinction).

14. Tye (in press a) argues (on the basis of a neuropsychological claim) that the visual information processing in blindsight includes no processing by the object recognition system or the spatial attention system, and so is very different from the processing of normal vision. This does not challenge my claim that the superblindsight case is a very limited partial zombie. Note that superblindsight, as I describe it, does not require object recognition or spatial attention. Whatever it is that allows the blindsight patient to discriminate an X from an O and a horizontal from a vertical line, will do. I will argue later that the fact that such cases do not exist, if it is a fact, is important. Humphrey (1992) suggests that blindsight is mainly a motor phenomenon – the patient is perceptually influenced by his own motor tendencies.

15. If you are tempted to deny the existence of these states of the perceptual system, you should think back to the total zombie just mentioned. Putting aside the issue of the possibility of this zombie, note that on a computational notion of cognition, the zombie has all the same A-conscious contents that you have (if he is your computational duplicate). A-consciousness is an informational notion. The states of the superblindsighter's perceptual system are A-conscious for the same reason as the zombie's.

16. Actually, my notion of A-consciousness seems to fit the data better than the conceptual apparatus she uses. Blindsight isn't always more degraded in any normal sense than sight. Weiskrantz (1988) notes that his patient DB had better acuity in some areas of the blind field (in some circumstances) than in his sighted field. It would be better to understand her use of "degraded" in terms of lack of access. Notice that the superblindsighter I have described is just a little bit different (though in a crucial way) from the ordinary blindsight patient. In particular, I am not relying on what might be thought of as a full-fledged quasi-zombie, a super-duper-blindsighter whose blindsight is every bit as good, functionally speaking, as his sight. In the case of the super-duper-blindsighter, the only difference between vision in the blind and sighted fields, functionally speaking, is that the quasi-zombie himself regards them differently. Such an example will be regarded by some (although not by me) as incoherent – see Dennett (1991) for example. But we can avoid disagreement about the super-duper-blindsighter by illustrating the idea of A-consciousness without P-consciousness by appealing only to the superblindsighter. Functionalists may want to know why the superblindsight case counts as A-consciousness without P-consciousness. After all, they may say, if we have really high-quality access in mind, the superblindsighter that I have described does not have it, so he lacks both P-consciousness and truly high-quality A-consciousness. The super-duper-blindsighter, on the other hand, has both, according to the functionalist, so in neither case, the objection goes, is there A-consciousness without P-consciousness. But the disagreement about the super-duper-blindsighter is irrelevant to the issue about the superblindsighter, and the issue about the superblindsighter is merely verbal. I have chosen a notion of A-consciousness whose standards are lower in part to avoid conflict with the functionalist. One could put the point by distinguishing three types of access: (1) truly high-quality access, (2) medium access, and (3) poor access. The actual blindsight patient has poor access, the superblindsight patient has medium access, and the super-duper-blindsight patient – as well as most of us – has really high-quality access. The functionalist identifies P-consciousness with A-consciousness of the truly high-quality kind. Although functionalists should agree with me that there can be A-consciousness without P-consciousness, some functionalists will see the significance of such cases very differently from the way I see them. Some functionalists will see the distinction between A-consciousness and P-consciousness primarily as a difference in degree rather than in kind, as is suggested by the contrast between truly high-quality access and medium access. So all that A-consciousness without P-consciousness illustrates, on this functionalist view, is some access without more access. Other functionalists will stress kind rather than degree of information processing. The idea behind this approach is that there is no reason to think that the P-consciousness of animals whose capacities for reasoning, reporting, and rational guidance of action are more limited than ours thereby have anything less in the way of P-consciousness. The functionalist can concede that this thought is correct, and thereby treat the difference between A-consciousness and P-consciousness as a difference of kind, albeit kind of information processing.

17. Thus, there is a conflict between this psychological claim and the Schacter model, which dictates that destroying the P-consciousness module will prevent A-consciousness.

18. There is a misleading aspect to this example – namely, that to the extent that "conscious" and "aware" differ in ordinary talk, the difference goes in the opposite direction.

19. Of course, even those who do not believe in P-consciousness at all, as distinct from A-consciousness, can accept the distinction between a noise that is A-conscious and a noise that is not A-conscious. There is a more familiar situation that illustrates the same points. Think back to all those times you have been sitting in the kitchen when suddenly the compressor in the refrigerator goes off. Again, one might naturally say that one was aware of the noise, but only at the moment when it went off was one consciously aware of it. I didn't use this example because I am not sure that one really has P-consciousness of the noise of the compressor all along; habituation would perhaps prevent it. Perhaps what happens at the moment it goes off is that one is P-conscious of the change only.

20. There is a line of thought about the phenomenal/representational distinction that involves versions of the traditional "inverted spectrum" hypothesis (see Block 1990a; Shoemaker 1981b; 1993).

21. See White (1987) for an account of why self-consciousness should be firmly distinguished from P-consciousness, and why self-consciousness is more relevant to certain issues of value.

22. The pioneer of these ideas in the philosophical literature is Armstrong (1968; 1980). Lycan (1987) has energetically pur-

sued self-scanning, and Rosenthal (1986; 1993), Carruthers (1989; 1992), and Nelkin (1993) have championed higher-order thought (see also Natsoulas 1993). Lormand (forthcoming) makes some powerful criticisms of Rosenthal.

23. To be fair to Rey, his argument is more like a dilemma: for any supposed feature of consciousness, either a laptop of the sort we have today has it or else you can't be sure you have it yourself. So in the case of P-consciousness, the focus might be on the latter disjunct.

24. It is interesting to note that she was in many respects much worse at many face-perception tasks than LH (the prosopagnosic mentioned earlier) – she couldn't match photographs of faces, for example. I have noticed that people who know little about anosognosia tend to favor various debunking hypotheses. That is, they assume that the experimenters have made one or another silly mistake in describing the syndrome, because, after all, how could anyone fail to notice that they can't recognize faces, or worse, that they were blind. See Young & deHaan (1993) for a good debunking of the debunking hypotheses.

25. There is an additional problem in the reasoning that I will not go into except here. There is a well-known difficulty in reasoning of the form: X is missing; the patient has lost the ability to do such and such; therefore a function of X is to facilitate such and such. In a complex system, a loss may reverberate through the system, triggering a variety of malfunctions that are not connected in any serious way with the function of the missing item. An imperfect but memorable example (that I heard from Tom Bever) will illustrate: the Martians want to find out about the function of various Earthly items. They begin with the Pentagon, and focus in on a particular drinking fountain in a hall on the third floor of the north side of the building. "If we can figure out what that is for," they think, "we can move on to something more complex." So they vaporize the drinking fountain, causing noise and spurting pipes. Everyone comes out of their offices to see what happened and the Martians conclude that the function of the fountain was to keep people in their offices. The application of this point to the *petit mal* case is that even if I am right that it is A-consciousness, not P-consciousness, that is diminished or missing, I would not jump to the conclusion that A-consciousness has a function of adding powers of discrimination, flexibility, and creativity. Creativity, for example, may have its sources in the A-unconscious, requiring powers of reasoning and control of action and reporting only for its expression.

26. Indeed, in the italicized passage above (italics mine) there is an implicit suggestion that perhaps there are P-conscious events of which no record is made. I could only find one place in the book where Penfield (1975, p. 60) says anything that might be taken to contradict this interpretation: "Thus, the automaton can walk through traffic as though he were aware of all that he hears and sees, and so continue on his way home. But he is aware of nothing and so makes no memory record. If a policeman were to accost him he might consider the poor fellow to be walking in his sleep." To understand this properly, we need to know what Penfield means by "awareness," and what he thinks goes on in sleep. Judging by his use of synonyms, by "awareness" he means something in the category of the higher-order thought analyses or the self-consciousness sense. For example, in discussing his peculiar view that ants are conscious, Penfield seems to use "conscious" and "aware" to mean self-aware (pp. 62, 105, 106). In addition, he makes it clear that although the mind is shut off during sleep, the sensory cortex is quite active.

27. A similar line of reasoning appears in Shevrin (1992); he notes that in subliminal perception we don't fix the source of a mental content. Subliminal percepts aren't conscious, so consciousness must have the function of fixing the source of mental contents.

28. Although Baars is talking about the function of "conscious experience," he does have a tendency to combine P-consciousness with A-consciousness under this heading.

29. The collapse hypothesis should not be confused with Marcel's (1988, pp. 135–37) identity hypothesis, which hypothesizes that the processing of stimuli is identical with consciousness of them. As Marcel points out, blindsight and similar phenomena suggest that we can have processing without consciousness.

30. I am indebted to Jerry Fodor here.

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Perception-consciousness and action-consciousness?

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Abstract: Block's distinction between phenomenal and access consciousness is accepted, and it is agreed that one may be found without the other, but his account of the distinction is challenged. Phenomenal consciousness is perceptual consciousness, and it is a matter of gaining information of a detailed, nonverbal sort about the subject's body and environment. Access consciousness is good, old-fashioned introspection.

Block's distinction between phenomenal and access consciousness seems well motivated and he shows that a number of persons pass illegitimately from one to the other in the course of their discussions of consciousness. A-consciousness without P-consciousness seems possible, although it may be doubted whether in fact A ever occurs in the total absence of P. P-consciousness without A-consciousness has traditionally been found more difficult, probably because of Cartesian hangovers. (Besides the KK fallacy – if you know you must know that you know, there is the CC fallacy – if you are conscious you must be conscious that you are conscious.) The case given by Block in section 4.2, where the intense conversation makes one unaware of the pneumatic drill but at a certain point one realizes that one has been P-conscious of the drill for some time, seems convincing to me. But I would argue for the conceivability, the possibility, and the probable actuality of *deep* lack of A-consciousness of P-consciousness. Block does introduce such material in section 7, referring to observations that suggest that pain may be felt under hypnosis or anesthesia, although A-consciousness may be minimal or absent (see also Armstrong & Malcolm 1984, pp. 121–37).

To draw a distinction and to analyze it correctly need not be the same thing. I take issue with Block when he denies that P-consciousness is a cognitive, intentional, or functional property. At the center of P-consciousness, is perception, and perception, I think, is essentially propositional, a matter of perceiving or misperceiving that something has a certain property or that a certain thing is related in a certain way with a further thing or things. The word "propositional" here, of course, is not intended in any way to suggest language. Though propositional or representational, perception is a completely different type of

representational system from that found in thought and belief of a nonperceptual sort. The one may naturally be compared to picturing, the other to speaking or writing. Another comparison is between analogue and digital representation. P-consciousness includes bodily sensation, of course, which I take to be a species of perception: bodily perception or proprioception. It perhaps extends to imaging, which stands in close, if hard to spell out, relation to perception and to feelings of emotion (where the link may be bodily sensation). As Block recognizes, this form of consciousness is thoroughly interpenetrated by thought and belief, which suggests that it is itself representational in nature. P-consciousness yields very detailed, if easily lost, information (and misinformation) about a narrow field: the current state of our own body and its current environment.

The mammals, at least, are capable of a certain amount of inner planning. They have decision-making procedures that go on within their heads. This produces more efficient bodily action (which in our species includes speech). But this inner action, because it is purposive, cannot proceed without feedback about the current state of play inside the mind. Action without information is blind. A-consciousness, I suggest, provides that feedback. I would identify it with traditional introspective awareness.

Why is A-consciousness, though it includes awareness of P-consciousness, so different from P-consciousness? I suggest that the difference springs from the different tasks that A and P perform. The point of A is to allow inner planning that will result in bodily action that achieves goals. Goals will be somewhat indeterminate. One wants a bit of that meat, but any bit of reasonable size will do. One wants to get from a certain place to another, but innumerable slightly different ways of doing it will suffice, and no decision between the ways need be made until the physical action starts. Hence we get the relatively vague and indeterminate concepts that are associated with goals. One may hypothesize that A uses the detritus of P, mental images, in some way to signify these goals (and to remember). Perhaps in the evolutionary process thinking started as a calling up and manipulation of images, somehow tagged.

By contrast, in the course of proceeding toward a goal, information must be precise. One needs to know exactly how the situation is developing right up to and including achievement. So we have the specificity of P-consciousness. Block's "phenomenal content," I hypothesize, is no more than a species of representational content of a particularly detailed sort.

If it is P-consciousness that gives us information about the world, and A-consciousness that yields information about what goes on in the mind itself (including information about the content of P-consciousness), superblindsight, if it existed, would presumably be P-consciousness, and one that got plenty of information further up into the mind. But it would be P-consciousness of which there was no direct A-consciousness. Actual blindsight could still be *full* P-consciousness, but with only a little information trickling up to the higher centers. Or, as seems more likely, it is less than the full P.

I would expect, however, that P-consciousness is always the guardian of the gateway to the world. Agreeing with Block that P and A interact, I find A for access an unhelpful piece of terminology. What is the access access to? Better, I suggest, A for action; but still better, perhaps, I, for good, old-fashioned introspection.

Consciousness without conflation

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Abstract: Although information-processing theories cannot provide a full explanatory account of P-consciousness, there is less conflation and confusion in cognitive psychology than Block suspects. Some of the reasoning that Block criticises can be interpreted plausibly in the light of a folk psychological view of relation between P-consciousness and A-consciousness.

The history of cognitive psychology is studded with attempts to associate or identify various aspects of consciousness with information-processing constructs. Consciousness is putatively explained in terms of 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, but we do not think that what is going on here is a simple conflation.

We agree with Block that there is an important distinction to be drawn between P-consciousness and A-consciousness, and that P-consciousness leaves us (at least in our current state of understanding) with an explanatory gap (Davies 1955; Davies & Humphreys 1993). Nagel (1974) says that "structural features" of experience "might be better candidates for objective explanations of a more familiar sort." But even if these structural features are explained in information-processing terms, we are still left with the question of why there should be something rather than nothing that it is like to have certain processes going on in our brains. Current information-processing theories of P-consciousness are bound to be incomplete whereas (we assume with Block) there is no similar obstacle in the way of an information-processing explanation of A-consciousness. To that extent, standard cognitive psychological accounts of consciousness are more appropriate to A-consciousness than to P-consciousness. But that is not to say that there is a systematic tendency toward confused theorising grounded in the failure to distinguish between the two notions of consciousness.

In the context of an investigation of "automatic" and "controlled" processing, Shiffrin and Schneider (1977, p. 157) speculate, for example, that "the phenomenological feeling of consciousness may lie in a subset of STS [the short-term store], particularly in the subset that is attended to and given controlled processing." It is easy to imagine an objection: what purports to be an account of an aspect of phenomenal experience is cast in terms of storage and processing, terms that are appropriate for a theory of A-consciousness (cf. what Block says about Baars, Shallice, and others). But although Shiffrin and Schneider do not fully settle the question of the causal relation between being in the special subset of STS and being subject to controlled processing, there is no real evidence of conflation here.

A more sympathetic view of the cognitive psychological literature is possible if we begin from the plausible idea that P-consciousness may figure in the causal explanation of A-consciousness. Why do we say that the idea of a causal relation running from P-consciousness to A-consciousness is plausible? Briefly, 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 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 phenomenally conscious state. It is because the pain is P-conscious that it is A-conscious.

An A-conscious belief likewise has dispositional properties, and 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. On some accounts of the distinction between P-consciousness and A-consciousness, on which beliefs that are not P-conscious states, this question proves to be problematic. But Block is explicit that P-consciousness extends to thoughts, so he can allow the answer 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, since – given the explanatory gap – we cannot give a full explanation of P-consciousness in information-processing terms. But a partial reflection would be seen in the idea that the conditions that explain "structural features" of phenomenal experience might be found among 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 relation between P-consciousness and A-consciousness, as follows. 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. This is just the asymmetry to which Block points (sects. 4.1, 4.2).

Given the possibility of this more sympathetic reading of the cognitive psychological literature, what are we to make of the target reasoning that Block criticises? We shall surely agree that some arguments are nonstarters. If P-consciousness is actually present when flexibility in behaviour is absent (as in the epileptic seizure case), then any argument for the addition of flexibility as a function of P-consciousness is undercut. In the cases of prosopagnosia and blindsight, however, important aspects of normal conscious experience are plausibly absent: there is a P-consciousness deficit. And even if there is covert knowledge of the identity or profession of the person whose face is presented, this information is not at the service of rational decision taking: there is an A-consciousness deficit. We agree with Block that it would be a mistake to infer anything about one-way causal dependence, or about the function of P-consciousness, given only the association between these two deficits. But still, their cooccurrence is consistent with, and makes sense in the light of, the folk psychological view of the relationship between P-consciousness and A-consciousness.

Evidence that phenomenal consciousness is the same as access consciousness

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Abstract: Block seems to propose untested answers to empirical questions. Whether consciousness is a "mongrel problem," rather than a single core fact with many facets, is an empirical issue. Likewise, the intimate relationship between personal consciousness and global access functions cannot be decided pretheoretically. This point is demonstrated by the reader's private experience of foveal versus parafoveal vision, and for conscious versus unconscious representation of the many meanings of common words.

Whether consciousness is a "mongrel problem" or a purebred is an empirical question. Cancer, it used to be said, is a mongrel problem: the differences between leukemia and skin cancer are vast. A decade ago it was common to read that there was no such thing as cancer, there were only a mixed bag of cancers. Well, no more. Recent insights about the genes that control cell growth suggest that all cancers involve the same underlying dysfunction, expressed by different pathways and in different tissues.

The appropriate reply to Block's claim about the mongrel nature of consciousness is: How do you know? What is your evidence, and what models do you use to come to this debatable conclusion? In my own work, after a decade of carefully considering the vast amount of psychological evidence relevant to consciousness, and building seven explicit, increasingly inclusive models, I conclude that consciousness is a unified problem with many superficially different aspects (Baars 1988).

The relationship between personal consciousness and the access functions of consciousness is also an empirical issue. Consider the following. If you, the reader, focus on a single letter on this page, you may be conscious of neighboring letters within a few degrees, but of nothing beyond that into your visual periphery – though we know the peripheral field can process printed words in order to aim accurate saccades in reading. For another example, while reading the word "focus" in the previous sentence, you were very probably unaware of its nine alternative meanings. There is good evidence that at least some alternative meanings of ambiguous words are processed unconsciously in normal reading. These examples show natural contrasts between similar conscious and unconscious processes, much like experimental comparisons. There are dozens of such contrasts, and they constrain any theory of consciousness in an empirically solid way (Baars 1988; 1994a).

These contrastive pairs suggest that personal consciousness is functional and has an access function (Baars 1988; 1994; in press a; in press b). How do we know that personal consciousness is involved? The easiest proof is for the reader simply to go back to the demonstration above: Is the fixation point on this page really conscious? Is the periphery really not conscious? Can you report the conscious experience overtly, by word or signal? Is your report demonstrably accurate? Can you then discriminate, act upon, learn, retrieve, or imagine the letters at your fixation point? For conscious contents the answer is always yes – which is to say that we can access the letters at the fixation point perceptually, we can access information triggered by those letters (such as the meanings of words), we can access memory, learning abilities, short-term memory, voluntary control, and so on, based on consciousness of the target. Although the information in the periphery is at least partly processed, it provides none of these forms of access (e.g., Greenwald 1992).

The idea of conscious access is essential in everyday psychology as well. We ask people to pay attention to something because we would like them to gain conscious access to it. Block is asking us to pay attention to his target article for precisely this reason. If we only moved our eyes along the printed page and failed to become conscious of his meaning, he would certainly not be satisfied that his work has finally reached its intended audience. Implicitly, therefore, we all treat consciousness as an access function, one that is empirically inseparable from personal experience.

An explicit mechanism for conscious access is proposed in global workspace (GW) theory (Baars 1988; 1993; 1994; in press; Newman & Baars 1993). GW theory shows that the equivalence between personal consciousness and access consciousness is very productive indeed. Indeed, how could it be otherwise? Consciousness is a supremely functional adaptation. Biological evolution is not likely to produce two nearly identical organs in the same organism, one mirroring the other, one functional and the other merely personal. That is not how the natural world works. To say it once more: consciousness as an object of scientific scrutiny fits our personal experience remarkably well. This is not likely to be coincidence (Baars 1991).

More empirical cases to break the accord of phenomenal and access-consciousness

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Abstract: Additional experiments show that P-consciousness and A-consciousness can be empirically dissociated for the theoretically so-

phisticated observer. Phenomenal consciousness can have several degrees that are indirectly measurable.

The main way to show that Block's theorizing is more than just playing with words is to provide empirical cases where A-consciousness and P-consciousness can be, if not fully dissociated, then at least put into discord. I will describe some suggestive psychophysical experiments that lend support to the views put forward in the target article. (Minor disagreements will be pointed out at the end.)

1. Mutual masking. Suppose that two spatially overlapping but temporally discrete stimulus images, *A* and *B*, are exposed for a brief time (e.g., 10 msec) with short stimulus onset asynchrony (SOA, say, 70 msec). If any of the stimuli had been presented separately, they would have been perceived with 100% accuracy, but with mutual masking the percent correct (a measure of the type of consciousness necessarily including A-consciousness) is considerably lower or may even be at chance level. In our lab we have demonstrated that one can increase the intensity of the first stimulus, *A*, so that its recognizability does not increase but the subjective contrast or phenomenal clarity (an aspect of P-consciousness) of the following stimulus, *B*, increases without necessarily increasing the recognizability of *B* either. A problem emerges: How can one stimulus that does not benefit from the increase in intensity either in terms of A-consciousness or in terms of P-consciousness produce a benefit that is related to P-conscious aspects of the succeeding stimulus? Solutions to this problem (e.g., perceptual retouch theory, Bachmann 1984; 1994) could also help clarify the role of underlying neural mechanisms in distinguishing A- and P-consciousness.

2. Stroboscopic motion. Suppose *A* and *B* are identical bars, but separated in space so that their successive flashing leads to perceived, stroboscopic motions (phenomenally experienced as *A* moving from one position to another). For cognitively sophisticated observers it is evident that the space between *A* and *B* is empty and that two objects are actually being exposed (aspects of A-consciousness); nevertheless, they *see* motion (phenomenal motion). A problem emerges: it is difficult to suppose that in this creative interaction no representations for stimuli-in-motion are activated physiologically; so it is curious how physiological representations are involved, together with phenomenal experience of the motion-type-of-feeling, without any actual motion or rational belief in it. [See also Pylyshyn: "Computation and Cognition" *BBS* 3(1) 1980.]

3. Binocular rivalry. If two sufficiently different images, *A* and *B*, are simultaneously exposed in a stereoscope for longer observation times (at least for more than 150–200 msec, but better if for dozens of sec), *A* for the right eye and *B* for the left eye, then phenomenally subjects experience either *A* or *B*, but not both; usually, alteration is observed. Now, suppose *A* has just disappeared from direct experience, being replaced by *B*, but subjects can voluntarily analyze the memory-image of *A* mentally without experiencing much from *B* in terms of A-consciousness, even though *B* prevails in direct experience (an aspect of P-consciousness). A problem emerges: How is it that in direct visual experience a simultaneous P-conscious state of alternative images received via different visual channels is impossible, whereas memory-representations of the stimulus that is suppressed from the direct image can still be present as activated (apprehended) during the direct perceptual experience of the alternative image? Answers (including neuroscientific ones based, for example, on PET studies) could help us better understand the role of memory representation vis-à-vis "fresh" sensory signals in creating consciousness.

4. Illusory contours. We all are familiar with examples of visual images containing illusory contours or objects (e.g., Petry & Meyer 1987). One such example can be seen in Figure 1. To a cognitively sophisticated observer, careful analytic introspection should show that regions that appear to contain quite clear

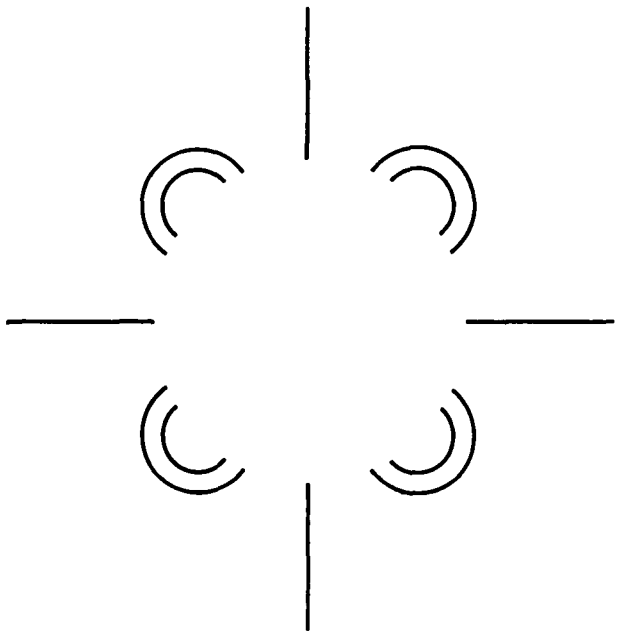

Figure 1 (Bachmann). An example of an image containing illusory contour.

contours (an aspect of consciousness necessarily including P-consciousness) actually lack photometric gradients of luminance in those spatial regions where visible contours seem to be located. It is obvious that without the special arrangement of the inducing elements so that perceptual representations that "suggest" some "absent" contours are activated, the phenomenon would not take place. A problem emerges: How is it that rational beliefs (an aspect of A-consciousness) contradict what the perceptual representations of inducing elements do in creating visible contours (an aspect of consciousness including P-consciousness) at the locus in space where all actual sensory signals indicating physical luminance gradients are absent? I would accordingly like to draw attention to another aspect of the discussion, namely, the problem of the role of A- and P-consciousness in testing and suggesting the *veridicality* of the components of mental experience. In the present case a curious possibility seems to be found where neither rational (theoretical) thought nor local sensory signals from the surface should suggest any visible contours, but the perceptual representation of the configuration of inducing elements provides the basis for a nonveridical sensory experience. My personal suggestion would be to invoke the concept of *typicality* to escape from this trap and allow mental representations to lead to nonveridical perceptual experience, given that this nonveridical experience is more representative of typicality than failing to sense objectively nonexistent contours would be. The very special arrangement (including alignment) of the inducing elements in the images that contain illusory contours makes it possible to create a typical (expected) perceptual image that includes nonveridical aspects. Experimental research based on stimuli with emergent (illusory) contours should be useful in further analyzing this side of the consciousness problem.

In the second part of this commentary let me present some more critical remarks.

First, Block regards P-conscious properties as distinct from any cognitive, intentional, or functional property. As far as cognitive neuroscience is avoided, I do not see any big problem in this, given good operational concepts. But if we consider that the activity of certain special neural mechanisms (e.g., reticular formation, nucleus reticularis thalami, etc.) is necessary for the P-conscious state to emerge then we may have some problems. For example, cognition includes selective attention, but more and more data suggest that attentional and consciousness-

generating functions share common mechanisms (Crick & Koch 1990; LaBerge 1990; Näätänen 1992; Smirnov 1974). Moreover, computer programs can simulate the interaction of specific cortical neuronal modules and nonspecific modulatory pathways from thalamus in the process of creating P-conscious aspects of mental activity (e.g., Bachmann 1994).

Similarly, P-consciousness is said to depend on what goes on *inside* the P-consciousness module (sect. 4, para. 8), but available data suggest that the P-conscious quality of a mental process (e.g., perception) is based on (or at least correlated with) the interaction of specific cortical neuronal representations and nonspecific, but selectively channelled thalamic modulation of the excitatory postsynaptic potentials of these neurons (Buser & Rougeul-Buser 1978; Sokolov 1986). A suggestive example comes from neurosurgical observations on artificial sensations in a clinic in St. Petersburg (Smirnov 1974). If certain thalamic nuclei of the patients were excited by implanted electrodes while specific afferent pathways remained unstimulated, patients often sensed phosphenes with an apparent position in visual space. These "blobs" at first lacked any specific object quality, but with repetitive thalamic stimulation they acquired figural identity (e.g., square, "flame," etc.). My speculation is that the neural systems for providing the necessary activation for the P-conscious aspect of experience were artificially used in isolation and initially created a form of "pure visual consciousness" without access to specific representation. However, with repeated stimulation specific representations were also recruited and integrated into the activation system. (By the way, through artificial stimulation of these thalamic structures Smirnov and colleagues (Smirnov 1974) were able to vary the P-conscious aspect of the mental state not in a discrete, all-or-none manner but on a continuum from "dull," unclear, and weak, to clear, bright, and intense visual feeling.)

Thus Block's fears about the impossibility of measuring P-conscious aspects of experience are not substantiated. Although the "attensity" (to use Titchener's [1908] term) or subjective clarity of visual experiences irrespective of the form or specific representation involved can be measured by several psychophysical scales; and although this ties A-conscious and P-conscious properties together by showing that it may be impossible to study the latter without the former being involved in subjects' reports, P-consciousness can nevertheless be measured, at least indirectly.

Second, Block seems to imply (sect. 4) that concepts have only a semantic/linguistic quality. But visual "abstractions" of certain classes of forms and patterns may also exist.

Third, Block seems to suppose (sect. 4.2, para. 7) that if some experience cannot be conceptualized or identified by some concrete category, then mental states or processes are nonrepresentational. But mental representations themselves are a system of hierarchically organized entities in which more differentiated and specific ones grow out of less specific and less differentiated ones microgenetically. Thus, at the basis of this system we may find "sensations as such" without much content except, perhaps, of general subjective clarity and maybe vague "whereness" (cf., e.g., Hanlon 1991). In other words, "nonrepresentational" mental states are "embryonic" states of representational ones, representing the fact of experiencing that "something is existential" (that is, belongs to the category of existing objects). Both in ontogeny and in the microgenesis of cognitive processes it is a long path from being conscious of "don't know what" to being conscious of a definite object. Another problem is that some neural modules may be needed to provide the subject with the capacity for P-consciousness (cf. thalamus, RF). (But then I have some difficulties in considering modules that are 100% nonrepresentational.)

Finally, in the target article, diminished P-consciousness is declared to be unreal (sect. 7, para. 8). But what if there is still a special module or set of modules for P-consciousness? And what if, either by the means of pharmacological treatment or by direct brain stimulation, we can vary the degree of activity of this system? I am convinced that subjects can report corresponding changes in their general "feeling." Although the means of *registering* these changes require A-consciousness mechanisms, the change in the state of P-consciousness is effected through the change in the state of P-consciousness module(s).

Fallacies or analyses?

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Abstract: To demonstrate that a fallacy is committed, Block needs to convince us of two things: first, that the *concept* of phenomenal consciousness is distinct from that of access consciousness, and second, that it picks out a different *property* from that of access consciousness. I raise doubt about both of these claims, suggesting that the concept of a phenomenal property is the concept of a property to which we have a special sort of access.

Ned Block accuses several writers of a fallacy – the fallacy of equivocation. According to him, from premises about what is true of consciousness in one sense of the term, conclusions about an entirely different sense of consciousness are drawn. The two senses of consciousness at issue are "access-consciousness," understood as a state's "availability for use in reasoning and rationally guiding speech and action," and "phenomenal consciousness," understood as the experiential aspect of a state.

To demonstrate that a fallacy is committed, Block needs to convince us of two things: first, that there are indeed two separate concepts at issue, and second, that the shift from claims that use concept to claims that use the other is not justified – as it might be, for example, by an argument to the effect that the two separate concepts actually pick out the same property. I am not sure that he has done either.

As Block himself reminds us, the concept of a "phenomenal" property is notoriously elusive, but he refuses to be embarrassed by this fact. Even those who suspect the concept of incoherence can, he claims, recognize that it is a *different* concept from that of "accessibility to reasoning, etc." I'm not sure what it means to judge that an incoherent concept (as opposed to each of its incompatible constituents) is different from some other concept; Block relies on examples (real and imaginary) to demonstrate the distinction, but it is doubtful that those who suspect incoherence can be persuaded in this way, since an incoherent concept, by definition, can have no referent. Most of the writers in question, however, seem to think that to talk of phenomenal properties is merely a loose or imprecise way of talking about what is more carefully rendered in terms of various access relations. I agree with Block in thinking that the shift from one way of talking to the other often occurs with very little by way of justification, but I remain unconvinced that there is a conflation of two distinct senses of consciousness.

As I see it, the reasons for thinking that the concept of a "phenomenal" property is incoherent actually overlap with the reasons for thinking that the concept of phenomenal consciousness and the concept of access-consciousness are indeed the same concept. To those of us with Kantian sympathies, anyway, it seems that a state cannot have a phenomenal property (or, equally, that it cannot count as an "experience," and there cannot be "something it is like" to be in that state), unless it is a certain way *for*, or *to* a subject. Which is to say, for a state to have a phenomenal property it must stand in a particular relation to the subject of that state. But, assuming that we have done away with the Cartesian idea of an insubstantial or homuncular self, a state can stand in some relation to the subject of that state only if it stands in some relation(s) to various *other* states of that

subject. So if one insists, as most advocates of phenomenal properties do, that a state such as the state of pain has the phenomenal character it has regardless of its relations with other states of the subject, one encounters a contradiction: the phenomenal properties of a state must be properties had in virtue of some relation between the state and a subject, yet they cannot be relational properties because they are supposed to be intrinsic to the states that have them. If, on the other hand, one accepts that phenomenal properties are relational properties, it is plausible to suppose that the relevant relations are some sorts of access relations – relations connecting the state to reasoning and to rational action, for example – since these are just the sorts of connections that shape an organism into a subject. If these are not the access relations that constitute a subject, presumably some other access relations (memory access, for example) are, and it is these others that will be necessary for consciousness.

As I said, Block depends on examples to demonstrate the independence of phenomenal consciousness and access-consciousness. But in addition to underestimating the problems posed by the charge of incoherence vis-à-vis phenomenal consciousness, he seems to underestimate the resources available to those who think that phenomenal consciousness *is* access-consciousness. Consider the example of a noise that I suddenly realize I have been hearing for the last hour. Block uses it to show that, prior to my realization, there is phenomenal consciousness without access-consciousness – thus that the two types of consciousness are distinct. But the access*ibility* (i.e., the access *potential*) of the hearing experience is evident from the fact that I do eventually access it. Moreover, it seems that I *would* have accessed it sooner had it been a matter of greater importance – and thus, in a still stronger sense, it was accessible all along. Finally, it is not even clear that it was not *actually* accessed all along insofar as it rationally guided my behavior in causing me to speak louder, or move closer, and so on (similar moves seem plausible in several of the other cases cited).

Accessibility, like its close cousin, verifiability, is a notoriously accommodating notion. For this reason, among others, I am partial to analyses that emphasize actual rather than potential access – especially access by second-order thoughts, or what Block calls "reflective consciousness." But that is another story.

I have noted some reasons to wonder whether the concept of phenomenal consciousness, if it is coherent, is really different from that of access-consciousness. Even if one grants the distinction, however, one could maintain that they refer to the same property – just as the concept of water and the concept of H_2O may be thought to refer to the same property. Once one accepts such an identity, there will be no fallacy in supposing that what is true of access-consciousness must be true of phenomenal consciousness as well – just as there is no fallacy in supposing that what is true of H_2O must be true of water as well. There are, of course, complicated and controversial metaphysical debates (concerning the nature of properties, essences, and identity, to name a few) that have a bearing on this line of reasoning; and, like Block, I find that the reasoning of the cited writers is often unclear. If one is prepared to treat consciousness as a natural kind, however, then the fact that in real life phenomenal consciousness and access-consciousness seem always to occur together may be treated as strong evidence in favor of the hypothesis that they are indeed one and the same thing.

At the end of his paper Block briefly entertains this possibility, remarking that phenomenal consciousness and access-consciousness may "amount to much the same thing empirically even though they differ conceptually." He acknowledges that his imagined case of "superblindsight" (where there is complete access-consciousness but no phenomenal consciousness) never actually occurs, yet he goes on to suggest the existence of real cases (such as Sperling's [1960] letter display experiment), where phenomenal consciousness and access-consciousness do part company. Again, however, in my opinion Block overestimates the power of examples, because he underestimates both the need to defend the concept of phenomenal consciousness against charges of incoherence, and the potential for endless accommodation by the concept of access-consciousness.

The path not taken

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Abstract: The differences Block attempts to capture with his putative distinction between P-consciousness and A-consciousness are more directly and perspicuously handled in terms of differences in richness of content and degree of influence. Block's critiques, based on his misbegotten distinction, evaporate on closer inspection.

Block amply demonstrates that there is ubiquitous confusion among researchers about consciousness, and he is right to locate a major source of the confusion in the spectrum of differences he attempts to tame with his purported distinction between P-consciousness and A-consciousness. That distinction may start out seeming quite intuitive. Indeed, Block relies heavily on appeals to our intuitions to hold it in place until he can get it properly defined and defended, but once that effort gets underway, he runs into a swarm of difficulties from which there is apparently no escape. I for one found it difficult to keep track of the tangle of objections and counterobjections, exemptions, caveats and promissory notes, and will be interested to see if other commentators can find their way into, and back out of, the maze Block has created.

There is an alternative, much more direct path that Block ignores, perhaps because it is deeply counterintuitive at first blush: the varieties of consciousness he thinks he sees falling under P-consciousness and A-consciousness can all be accommodated under the two rough *quantitative* headings of *richness of content* and *degree of influence*. Some episodes of mental life have impoverished contents, whereas others are so rich in content – so full of information about the perceived world, for instance – that one has the sense that no practical description or catalog could do justice to them. The latter – and they are the normal, everyday episodes of consciousness – Block would declare to be instances of P-consciousness because they are, shall we say, *phenomenologically impressive*. The former, such as actual (as opposed to imaginary) cases of blindsight, have such vanishingly little content that subjects standardly deny that they are conscious of any content at all, though forced-choice guessing famously demonstrates that there was some content at work there after all, capable of influencing some choices, but unable to serve as the cue or prompt for rational action (Weiskrantz 1986; 1990). Can such simple differences of quantity, not quality, do justice to the variety of phenomena? Don't we need something altogether different – *qualia* (or their absence) – as well? I have said no, and have defended this claim at length (Dennett 1991), but it was apparently too drastic a stroke for some readers to accept – or in the case of Block, to be recognized as a serious alternative to be dealt with at all. Yet now Block has done my theory a fine service: nothing could make my admittedly counterintuitive starting point easier to swallow than Block's involuntary demonstration of the pitfalls one must encounter if one turns one's back on it and tries to take his purported distinction seriously.

The main trouble with Block's attempt to motivate two independent dividing lines (where I would put differences in degree) is that in the normal run of things, his two kinds of consciousness run together, as he himself acknowledges several times. He cannot provide clear examples of A-consciousness without P-consciousness or P-consciousness without A-consciousness, and although he claims that both are "conceptually possible," it

is unclear what this comes to. Moreover, if these two sorts of consciousness are conceptually independent, as Block insists, then he is not entitled to several claims he makes about P-consciousness. Consider, for instance, his discussion of the phenomenon in which the solution to a difficult problem suddenly comes to you without conscious thought. He surmises that the "high-level reasoning processes" by which you solve such a problem are not P-conscious (in addition to not being A-conscious). How does he know this? How could he know this, or even deem this more probable than not? He notes – but is apparently not embarrassed by – a similar problem with his account of blindsight. "Note that the claim that P-consciousness is missing in blindsight is just an assumption. I decided to take the blindsight patient's word for his lack of P-consciousness of stimuli in the blind field" (sect. 6, para. 21). But taking the subject's word is using the best criterion for A-consciousness as one's sole evidence of P-consciousness. Block himself demonstrates thereby that the very idea of a sort of consciousness independent of access is incoherent.

Although Block discusses my theory of consciousness at some length, his discussion always leans on the presupposition that his putative distinction is in place. My theory of consciousness is stranded, he concludes, between being trivially false (if a theory of P-consciousness), nontrivially false (if a theory of "just" A-consciousness), and banal if a theory of "a highly sophisticated version of self-consciousness" (sect. 5, last para.). Because I not only decline to draw any such distinction but argue at length against any such distinction, Block's critique is simply question-begging. I may be wrong to deny the distinction, but this could not be shown by proclaiming the distinction, ignoring the grounds I have given for denying it, and then showing what a hash can be made of ideas I have expressed in other terms, with other presuppositions. If Block thinks his distinction is too obvious to need further defense, he has missed the whole point of my radical alternative. This is a fundamental weakness in the strategy Block employs, and it vitiates his discoveries of "fallacies" in the thinking of other theorists as well. Those of us who are not impressed by his candidate distinction are free to run the implication in the other direction: since our reasoning is not fallacious after all, his distinction must be bogus.

What would a good test of the two different starting points be? Look at their treatment of a particular phenomenon – for example, blindsight – from a neutral point of view. In my own discussion of blindsight (Dennett 1991, pp. 332–43) I argued that if a patient could be trained to treat blindsight stimuli as self-cuing or prompting, this would amount to *restoring* the patient's consciousness of events in the scotoma, the only remaining difference between such experience and normal vision being the relative poverty of the content of what could be gleaned from the scotoma. Relative poverty of content – not "absence of qualia" or lack of P-consciousness – was a non-optional hallmark of blindsight, I claimed. To drive the point home, I asked counterfactually, what we would conclude if we encountered someone who *claimed* to suffer from blindsight of a strange high-content variety – correctly "guessing" not just the words written on a page placed in the putative scotoma, for example, but their typeface and color, for instance. I claimed this would stretch our credulity beyond the limit; we would not and should not take somebody's word that they were "just guessing" in the absence of all consciousness (all P-consciousness, in Block's terms) in such a case. Block, interestingly, thinks otherwise. He does not refer to my discussion of blindsight, but coins the term "superblindsight" to discuss much the same sort of imaginary case, and supposes without argument that in such a case we *would* credit the patient: "The superblindsighter himself contrasts what it is like to know visually about an X in his blind field and an X in his sighted field. There is something it is like to experience the latter, but not the former" (sect. 4.1, para. 5).

Now here we have a direct difference of implication between the two starting points – a useful point of contrast even if the cases are not likely to come up for empirical confirmation! But the issue is not yet joined if we imagine the case the way Block invites us to do, with the huge normal difference in richness of content between the sighted field and the scotoma or blind field. If our imaginary patient, like all actual blindsight patients yet studied, can identify the typeface, size, colors, and textures of the sighted-field X and its background, but can only identify that there is an X (as opposed to an O) in the blind field, this would be a large difference in richness of content that would account, on my view, for the patient's willingness to draw the sort of contrast Block imagines the superblindsighter to draw: it is "like something" to detect the X in the sighted field, and it isn't like anything to detect the X in the blind field.

For Block to put his claim about blindsight in direct competition with my alternative, he must control for richness of content, which I claim is the only other important variable; he must stipulate – in whichever way he chooses – that the richness in content is the same in both fields. The patient can tell us no more about the X in the sighted field than about the X in the blind field – either because the former is bizarrely impoverished or the latter is bizarrely rich. Take the latter case first: would you "take the subject's word," as Block says, that *it wasn't like anything at all* for him to come to know, swiftly and effortlessly, that there was a bright orange Times Roman italic X about two inches high, on a blue-green background, with a pale gray smudge on the upper right arm, almost touching the intersection? (That's a sample of the sort of richness of content normally to be gleaned from the sighted field, after all.) I for one would wonder what sort of lexical amnesia or madness had overcome anybody who could gather that much information from a glance and yet deny having any conscious visual experience. Alternatively, if all our imaginary patient can tell us about the X in the *sighted* field is that it was an X, not an O, I think most people would be baffled about what he could possibly mean by his insistence that nevertheless he had "P-consciousness" of the sighted field, but not of the blind field (in which he made the same discrimination).

Imaginary cases are of limited value in such theoretical explorations, but this time I think the flight of fancy nicely reveals how Block mislocates the issue. It is not that we others are "conflating" two sorts of consciousness; it is that he is inflating differences in degree into imaginary differences in kind.

Breakthrough on the consciousness front or much ado about nothing?

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Abstract: Propositions as to the nature of consciousness, based on disorders of perception that result from brain damage, and taking insufficient account of the numerous ways in which normal subjects may deviate from that "usual" sequence of events (input → subjective awareness → output) risk increasing rather than diminishing any existing confusion about the function of consciousness.

Few could argue with the unsurprising proposition that being conscious of something is not the same as acting on that information, or conversely, that we may not do anything about much of which we are aware. Block's treatment of this truism is, however, not above criticism. First, it is itself an oversimplification of what are really very complex issues. If the purpose is to tackle the "dangerous" conflation of P-consciousness and A-consciousness there are at least six situations which need to be considered:

1. S is aware of something (P-consciousness) to which he tries respond but because, say, curarized, fails to do so (i.e., access-consciousness without access).

2. S fails to respond to something of which he is aware, because he chooses not to (i.e., a case of voluntary prevention of A-consciousness actually evoking a response).

3. S has P-consciousness of a stimulus to which he unconsciously (or involuntarily) responds, as in the case of a startle response. This scenario is complicated by the fact that he may or may not be conscious of his response or of exactly what preceded it. Compare, for example, CNS-mediated responses like the startle reflex with such ANS reactions as facial vasodilation. On the grounds that response time to the former is much faster than to the latter (after all, we don't talk about a "blush reflex") we have the paradoxical possibility that A-consciousness may mediate involuntary behavior, the physiological bases of which are usually associated with unconscious responding!

4. S is aware of something (P-consciousness) he mistakenly believes caused his response when, in fact, the latter was triggered by cerebral events which occurred prior to its phenomenal representation (see Libet et al. 1983). Quite apart from reducing the whole notion of A-consciousness to a delusional figment of P-consciousness, this scenario calls into question any attempts to divide up consciousness into Ps and As without first determining or at least deciding what consciousness is. If it is a mere epiphenomenon then distinctions between Ps and As are meaningless.

5. S responds to external stimuli of which he was (or claims to have been) unaware. This is the situation which Block uses to make his point about distinctions between P and A consciousness. But once again the issues involved are rather more complex than he leads us to suppose. Thus, though unaware of the external stimulus S may or may not be aware (i.e., have P-consciousness) of the fact that he is being stimulated (e.g., compare tachistoscopic presentations of a stimulus with prolonged presentations at intensities below the aware threshold). Similarly, though presumably unaware of the contingency between the stimulus and his response, he may or may not be aware of making a response. The relationship between P- and A-consciousness is further confounded by the finding (Groeger 1984; see also Dixon 1981) that contingent responses initiated by stimuli for which S had partial (i.e., P-conscious) information may differ qualitatively from those causally related to the same stimuli but without any intervening P-consciousness (i.e., structural similarities between stimulus and response are replaced by semantic relationships between the two).

Of a similar genre are those interesting situations wherein S responds inappropriately because unable to distinguish between two P-consciousness experiences, one real, the other in hypnotically induced hallucination (see Hilgard 1977, p. 99). In such cases are there one or two A-consciousness experiences? The same might be asked for another, less uncommon situation, that of so-called absent-mindedness (see Reason & Mycielska 1982), wherein S intends one pattern of behaviour but, through force of habit, carries out another. Of all the situations discussed, it is this one which casts the greatest doubt on the usefulness of hiving off A- from P-consciousness.

6. Finally, any distinction between the two sorts of consciousness is further clouded by those situations wherein for emotional reasons S suppresses consciousness of the external scene yet nevertheless shows – by, for example, some ANS reaction – that he has unconsciously registered its meaning. The data from numerous studies of perceptual defense and the time-honoured clinical observation that patients presenting with hysterical blindness are remarkably adept at avoiding obstacles placed in their path exemplify this scenario. As to the latter, are we to conclude that there is such a state or function as *unconscious* access-consciousness?

So much for a by-no-means exhaustive list of instances which exemplify the extraordinarily diverse nature of possible relationships that can obtain between brain, mind, behavior, and the external world. Faced with this plethora of possible interactions, it is not immediately clear how partitioning consciousness into two states, P and A, when either can occur without the other, or one after the other, or both together, helps our understanding of either.

My last point concerns the empirical grounds on which Block bases his argument. Unlike the situations listed above, they involve the behaviour and/or introspections of people who have suffered brain damage. Interesting though it may be, such evidence is, for any general theory of consciousness, at best dubious, at worst irrelevant, even misleading. Not only may organic syndromes include altered states of consciousness and/or a variety of compensatory mechanisms not usually found in connection with undamaged brains, but the number of cases studied hardly qualifies as a scientifically valid sample for the making of any sweeping generalisations. The number of (reputedly) thirsty blindsight patients studied near a glass of water is not, I suspect, very large. And even if it were, how could we be sure that people so afflicted wouldn't feel, at some P-conscious level, deserving of something a little stronger?

The only justification for yet another concept in an area already overloaded with vague labels for ill-defined mental processes is that the new concept refers to some constant function. If one compares the sustained conscious attention necessitated by, say, sinking a long shot on the putting-green with the disruptive effects of conscious effort in other high-grade skills, the case for a concept of A-consciousness as some sort of "lubricant" is hardly justified. There is certainly a difference between being aware of something and reacting to this fact, but not, I would suggest, in the quality of consciousness concerned. Attaching rather more importance to my own introspective data than to other people's blindsight I would submit that differences in the attention afforded elements of P-consciousness are perhaps more important for theories of consciousness than how these elements affect subsequent behaviour.

Is consciousness of perception really separable from perception?

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Abstract: Although not the main point of his target article, Block defends the view that perception and awareness of perception could be functions of different brain systems. I will argue that the available data do not support this view, and that Block's defense of the view rests on problematic construals of the "executive system" and of the components of information-processing models.

Schacter's model of perception-awareness dissociations, with its box labeled "consciousness," has been criticized by anti-Cartesian modularists, including me. The model is interesting and worthy of discussion because it embodies a particular view of consciousness in a very explicit way. Specifically, it includes a component that is necessary for phenomenal consciousness of perception, but not necessary for perception itself. The idea that there is some separate brain substrate dedicated to consciousness goes back at least as far as Descartes' theorizing about the pineal gland, and seems justified in our modern scientific framework by the observation that localized brain damage can sometimes seem to impair conscious awareness of perception but not the perception itself. However, a closer look at such cases reveals that perception is not, in fact, normal. I have suggested that the correlation that exists between degraded perception and loss of phenomenal awareness is more consistent with the view that conscious awareness (both the access and phenomenal kinds) depends on the quality of information representation within perceptual systems, rather than on the involvement of a separate consciousness system (Farah 1994).

Block gives two arguments in defense of Schacter's model.

The first rests on the idea that the Phenomenal Consciousness System is also required for integrating the outputs of the various modules and transmitting information to the Executive System. From this he infers that the loss of such a component would result in just the degraded perception to which I have already referred, because such individuals cannot integrate and transmit to their executive system the unconsciously perceived information. Thus, according to Block, the fact that implicit or covert perceptual performance is generally inferior to normal performance on the same tasks should not lead us to reject the model of Schacter or, more generally, models that feature consciousness boxes.

But do the perceptual tasks discussed by Block and Schacter require information integration and the involvement of the Executive System? For example, why would detecting or localizing a spot of light require cross-module integration? Even the association of a face with semantic knowledge about the person is hypothesized to be a within-module operation according to the model (see sect. 2 of the target article). The role of the Executive System in these tasks is also questionable. We have some independent information about the kinds of tasks that do and do not require executive processing, and the perceptual tasks in question do not. The idea of an Executive System in psychology derives partly from the behavior of patients with prefrontal damage whose reasoning and actions seem poorly orchestrated or disorganized. Indeed, such patients provide the most direct evidence for the existence of a distinct and dissociable system in charge of executive functions. But empirically, prefrontal damage of the kind that impairs executive functions does not impair the ability to localize spots of light, recognize faces, or read printed words. Nor is it apparent why, a priori, we would expect such simple tasks to involve executive processes.

What about the possibility that consciousness is like the water in a hydraulic computer? According to Block, "even if there could be an electrical computer that is isomorphic to the hydraulic computer but works without water, one should not conclude that the water in the hydraulic system does nothing" (sect. 2, para. 9). I grant that, for all we know, there could be aspects of the *implementation* of an information-processing system that determine whether or not that system has consciousness. By implementation I mean all of the ways in which the physical substrates of two systems might differ and still perform the same information processing as diagrammed in a box-and-arrow model. However, this type of difference would not be reflected in a functionalist information-processing model. The boxes and arrows ought to be the same for Block's electronic and hydraulic systems if they are indeed isomorphic. Hence if one wanted to pursue an account of consciousness based on the roles of implementation-specific aspects of the system, such as the water in a hydraulic computer, one would not hypothesize a Phenomenal Consciousness System, or any function component dedicated to consciousness. The parts (boxes and arrows) of a functional information-processing model do not correspond to just any parts (e.g., water) of a physical system; rather, they are constrained to be entities that take information as input, store or transform it, and give information as output. I conclude that, in the absence of what Block calls "superblindsight" (or its equivalents in prosopagnosia, neglect, or alexia), there is no reason to believe in a consciousness module whose function is to take input from perceptual systems and transduce them into consciousness.

Guilty consciousness

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Abstract: Should we distinguish between access and phenomenal consciousness? Block says yes and that various pathologies of consciousness support and clarify the distinction. The commentary charge that the distinction is neither supported nor clarified by the clinical data. It recommends an alternative reading of the data and urges Block to clarify the distinction.

Imagine that the patient XYZ (case adapted from Bauer 1984), an untenured professor of philosophy at Rutgers University, suffered bilateral traumatic hematomas of the occipitotemporal regions and posterior temporal lobes, causing him to be severely prosopagnosic. The prosopagnosia degraded his recognition of family members, departmental colleagues (such as Jerry Fodor), and his own mirror image. On one occasion, staff neurologists at the hospital where he was treated dressed XYZ's philosophy department colleagues and clinical personnel in hospital attire and asked the patient to point to individually named persons. He performed at random level.

A modified decriminalized version of the Guilty Knowledge Test (GKT; see Bauer 1984) was applied to the patient. Skin conductance was recorded. Electrodermal responses revealed much more accurate discrimination between correct and inappropriate names, suggesting that the patient "recognized" colleagues' facial identities at the visceroautonomic level. As an attending physician reported with a touch of metaphor, "GKT revealed an island of spared information in a sea of cognitive insensitivity."

Enter Ned Block, whose rich and fascinating target article contains far more content than I can cover in this commentary. I shall place him in the role of attending neurologist to pinpoint primary concerns with his article.

"Were you conscious of Jerry Fodor?" "No," says XYZ, "I saw someone but I certainly did not appreciate that he was Fodor." "However using psychophysiological measures, we have shown that you 'discriminated' Fodor from among those in your room, despite his being dressed in hospital garb," says Block. "So what?" says XYZ, somewhat impatiently.

Block does not wish to challenge XYZ's denial of being Fodor-conscious. Block takes XYZ at his word. XYZ eyed Fodor and knew that he saw someone but failed to recognize (overtly and specifically) that it was Fodor. "So here is how I describe your situation," says Block:

> Cases of prosopagnosia and other modality-specific disorders of identification are cases in which two types of consciousness may be absent. One, the access-type, figures in certain sorts of intelligent or rational behavior, especially verbal behavior and introspective reports. The other, phenomenal consciousness, consists in what it is like for a subject to do or undergo something (to see, hear, smell, taste, and have pains). Had you been phenomenally conscious of Fodor you would have had a "Fodor-ish" visual image or perhaps a feeling of familiarity when looking at Fodor. But you did not. So phenomenal consciousness of Fodor was absent. Meanwhile, had you been access-conscious of Fodor you would have reported his presence or directed activity at him in a manner distinctively appropriate to his presence. But again you did not. So access-consciousness of Fodor was also missing.

XYZ is no slouch. He is a philosopher. He is at Rutgers. He has views about mind, is puzzled by Block's distinction, and worries about whether he is better off thinking of himself in either of the following ways:

More-Block-than-Block (MBB): Adopt Block's two types of consciousness distinction, but acknowledge that access-consciousness can be degraded, and say that he (XYZ) was access-conscious of Fodor because this helps to explain his arousal at Fodor's presence. Admittedly, visceroautonomic arousal is not a paradigmatic form of rational or intelligent behavior, but it does prime or poise persons for intelligent, goal-directed activity. It could have set the behavioral stage for XYZ's communicating with Fodor if he also had been phenomenally consciousness of Fodor and then asked Fodor why he was in his (XYZ's) hospital room.

Unmitigated what-it-is-like-theorist (WLT): Reject Block's distinction. Then assert (Flanagan 1992) that all consciousness is

phenomenal consciousness and that a person can be informationally sensitive without that information making a subjective or conscious appearance. XYZ was informationally sensitive to Fodor without being Fodor-conscious.

What recommends Block's diagnosis of XYZ over either MBB or WLT? Nothing I can spot.

Consider MBB. A central presupposition of cognitive neuropsychology is that brain damage often produces selective impairment of specific cognitive functions. This is called the "fractionation assumption" (Caramazza 1992). The fractionation assumption does not require that a specific component of intelligence be totally damaged, only that damage be sufficiently severe to be noticeable behaviorally. Cognitive neuropsychology (McCarthy & Warrington 1990) is filled with descriptions of neurologically impaired and partially degraded forms of intelligent behavior. So it is to perch on a thin reed to insist that access-consciousness figures in rational action or intelligent behavior, but then to disallow, as Block apparently does, that deficits and impairments are very small windows through which access-consciousness can still be glimpsed. Fodor-arousal may not gain XYZ tenure, but it may reveal attenuated access-consciousness of Fodor.

If human intelligence can be partially degraded, then so it seems can access-consciousness. Between plenty of access-consciousness and no access-consciousness lies the huge conceptual midway of *some* access-consciousness. Fodor-arousal could inhabit that midway.

Now consider WLT. Discordance between informational and experiential sensitivity does not require invoking access-consciousness. XYZ's arousal demonstrates that Fodor has meaning for him even though Fodor does not have phenomenal meaning. So what allows Block to assume that phenomenal consciousness is a *restricted* type of consciousness and that there is an additional type?

Nothing in Block's argument for access-consciousness indicates that reference to access-consciousness will prove useful in understanding agnosia. In the end the justification is *conceptual:* if imaginatively there could be robust intelligence without phenomenal consciousness, then there should be a distinction between access and phenomenal consciousness. Or again: if we can picture a zombie version of XYZ gaining tenure at Rutgers regardless of lacking phenomenal consciousness, then there should be a distinction between XYZ's phenomenal consciousness of Fodor and his access consciousness of Fodor.

But why accept the conceptual possibility of zombies? What guarantee do we have that a zombie's performance would be sufficient for tenure? Zombie after tenure? Perhaps. But before? Hardly.

Nietzsche once remarked "one can lie with the mouth, but with the accompanying grimace one nevertheless tells the truth." XYZ is no liar but his "accompanying grimace" reveals that in some sense he knew that Fodor was present. Call this sense S. S either is or is not an instance of consciousness. If the only consciousness is phenomenal, then S is not an instance of consciousness, for S is not phenomenal consciousness. If, however, something nonphenomenal can count as consciousness, then why not count S – Fodor arousal – as consciousness? Why not specifically count it as an instance of access-consciousness?

Here is my worry in a nutshell: Block wants to raise the access-consciousness threshold so as to exclude something like S from counting as access-consciousness, but it is not clear where or how the threshold is to be set. He also wants to include a form of consciousness other than phenomenal consciousness, but it is not clear why.

Perhaps there is something in Block's argument I just do not see. Certainly on other occasions and in response to other sorts of psychopathological data I am eager to draw distinctions within the domain of consciousness (Graham & Stephens 1994). I am not in general opposed to consciousness distinctions. I would hate to be blind to the wisdom of Block's distinction.

Phenomenal fallacies and conflations

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Abstract: A "fallacy" is something like the sense-datum fallacy, involving a logically invalid argument. A "conflation" is something like Block's conflation of the (alleged) raw feel of an experience with what it is like to have the experience. Trivially, a self is conscious of something only if it accesses it. Substantive issues concern the nature of the conscious self and the nature of access.

1. Fallacy. Block claims that a number of authors commit a fallacy in discussing consciousness. To evaluate his claim, it may be useful to have an example of a real logical fallacy. Here is one, the *sense-datum fallacy.*

> When you see something, what you are most directly aware of could be the same even if there was nothing before you and you were merely hallucinating.
>
> So, when you see something, what you are most directly aware of must be a purely mental sense-datum.

Apart from the truth or falsity of the conclusion of this argument, the argument itself is logically fallacious, since it has the same logical form as another argument that is clearly invalid.

> You can look for something even if there is nothing in your environment (or anywhere else in the world) of the sort you are looking for.
>
> So, when you look for something, you are always looking for something mental.

The conclusion here clearly does not follow from the premises. You may look for something that does not exist. In that case, you aren't looking for something mental – an idea of the desired object. That does exist and you already have it!

Similarly, you can see something that doesn't exist. From the fact that what you are aware of may not exist, it does not follow that what you are aware of is something mental. To suppose that this does follow is to commit the sense-datum fallacy (Harman 1990).

It isn't clear that Block convicts anyone he mentions of a logical fallacy in the sense in which the sense-datum fallacy is a logical fallacy. That Block accepts the sense-datum theory is clear from remarks such as the following. "Consider a perceptual state of seeing a square. This state has a P-conscious content that represents something, a square" (sect. 4, para. 9). "[S]uppose I have an auditory experience as of something overhead, and a simultaneous visual experience as of something overhead. . . . The look and the sound are both *as of something overhead,* but the two phenomenal contents represent this via different phenomenal qualities" (sect. 4.2, para. 7).

Now I am not saying that anyone who accepts the sense-datum theory of perception (as Block does) must have committed the sense-datum fallacy. One can only commit a fallacy by arguing in a certain way. Block does not on this occasion argue for those aspects of the sense-datum theory that he accepts, so he cannot be accused of arguing fallaciously for them!

2. Conflation. Block also claims that various authors conflate different kinds of consciousness. Here too it would be useful to have an example of an actual conflation. A pertinent example would be Block's conflating "what it is like" to have a certain experience with the nonrepresentational "raw feel" of the experience, if any.

2.1. What is it like? Asking what it is like to have a particular experience is similar to asking what someone means by a particular expression (Harman 1993). I understand another's use of an expression only if I can find an equivalent expression in my own language (and sometimes I have to enlarge my language to do so). Even if the meaning of an expression is determined by the way the expression is used, telling me how the expression is used will not tell me what it means unless I can use what you tell

me to find (or invent) an equivalent expression of my own. Similarly, even if the character of an experience is determined by its physical or functional aspects, telling me those aspects will not tell me what it is like to undergo that experience unless I can use what you tell me to remember or imagine myself undergoing the experience (Nagel 1974).

2.2. Representation versus raw feel. Experiences typically have representational ("intentional") content. Perceptual experience represents one as oriented within a particular environment, for example. Two questions arise about this. First, do all experiences have representational content or are there raw feels without such content? For example, are sensations raw feels?

Second, if there are raw feels, do perceptual experiences consist in raw feels that serve as the representations with the relevant perceptual content? I have elsewhere (Harman 1990) reviewed arguments that sensations are not raw feels but are instead experiences representing events in parts of one's body. Block disagrees, although his orgasm example (sect. 4.2, para. 7) is not the obvious counterexample he appears to believe it is. I have also reviewed (in Harman 1990) arguments that perceivers are not and cannot become aware of those qualities of their experience (the splotches of "mental paint," as it were) that serve to represent aspects of the environment. Here again Block disagrees.

2.3. Consciousness as access to the self. Conscious experiences do not float around unattached to selves. A conscious experience is always the experience of some self S. An event with representational content or raw feel (if there is such a thing) can exist within S without being one of S's conscious experiences, for example, a representation of stomach acidity used in digestive functioning or a representation of edges used in visual processing. For S to experience E consciously, S (and not just some subsystem of S) must consciously access the relevant feel or content.

So, there is a sense in which it is (or should be) trivial and uncontroversial that consciousness is "access-consciousness." A substantive theory of consciousness necessarily involves a theory of what constitutes a self and of what constitutes access to that self. A theory that identifies the essence of a self with rationality (especially including rational control of action and rational thought), will suppose that access to the self is access to rationality, the exact details varying with the theory in question.

2.4. Three distinctions. There is a distinction between (1a) content and raw feel (if such exists) that is accessed by the self in the sense that it is experienced by the self and (1b) content and raw feel that is not accessed by the self in this sense. If there are raw feels (which many theorists have argued against), there is a distinction between (2a) the content of a representation and (2b) the raw feel of a representation. There is also a distinction between (3a) and those features of an event and (3b) those features of an event that do not constitute what it is like to experience the content and feel of the event.

Block's purported distinction between "access consciousness" and "phenomenal consciousness" appears to conflate these three different distinctions. In particular, his distinction appears to conflate the (alleged) raw feel of an experience (2b) with what it is like to have the experience (3a). These are clearly different because (i) what it is like to have an experience can include having an experience with a certain content and (ii) it is in dispute whether raw feels are ever experienced but it is not in dispute that there is something that it is like to have one or another experience.

Furthermore, "access consciousness" is redundant, since to access an experience is simply to be conscious of it, allowing for substantive disagreements about what a conscious self is and what sort of access counts as consciousness.

Finally, I do not see that Block convicts any of the theorists that he discusses of any conflations in the sense of "conflation" in which his own distinction between "active consciousness" and "phenomenal consciousness" seems to represent one.

Blocking out the distinction between sensation and perception: Superblindsight and the case of Helen

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Abstract: Block's notion of P-consciousness catches too much in its net. He would do better to exclude all states that do not have a sensory component. I question what he says about my work with the "blind" monkey, Helen.

I am all for Block's distinction between phenomenal and access-consciousness. But it is a shame he does not have the courage of his own convictions, and so fails to make as radical or clean a division as is needed. His P-consciousness is itself something of a mongrel, including a whole lot that (to my mind) has no phenomenal content at all.

In *A History of the Mind* (Humphrey 1992) I argued that to be phenomenally conscious is to be conscious of bodily sensations ("bodily" being widely interpreted to include all the sensory surface – eyes, ears, nose, as well as skin) and that that is it, nothing else counts. Although one can be P-conscious of itches, colours, sounds, and so on, one cannot be P-conscious of, say, chairs, numbers, or sentences. The latter are simply in the wrong domain.

Block notes (n. 13) that "The distinction [between P- and A-consciousness] has some similarity to the sensation/perception distinction. . . See Humphrey (1992) for an interesting discussion." But anyone who looks this up will find Humphrey arguing not just that there is some similarity here, but that the distinction is – at least it ought to be – the very same one.

Take the case of "what it is like to see a glass of water." In my book almost everything that it is like to see a glass of water is comprised by having the visual sensations of coloured light, and almost nothing by having the elaborated perception or thought that this is in fact a glass of water. I say "almost everything" and "almost nothing," because there is of course a certain difference at a phenomenal level between seeing X as glass of water and seeing X as something else (or, as Wittgenstein might have suggested, between hearing the exclamation "Block!" as a request for a building block and hearing the exclamation "Block!' as a greeting to the philosopher). But if there is indeed a bit of difference, it is only because perceptual content can have a marginal top-down effect on the structure of the sensory field – on figure-ground relations and so on – and not because the idea of its being a glass of water (or a blockish sort of Block) directly enters phenomenal consciousness.

I agree with Block that there has been confusion about precisely what aspect of consciousness is missing in blindsight. And in the past I myself have probably contributed to the confusion (although in *A History of the Mind*, where I suggest that while visual *sensation* is missing in blindsight, some motor-related aspects of visual *perception* are left intact, I get it nearer right.) A lot of what Block says here is good, but I should take this chance to correct several misapprehensions in his references to my study of the monkey, Helen (sect. 4.1, para. 7).

1. Helen, several years after removal of the visual cortex, developed a virtually normal capacity for ambient spatial vision, such that she could move around under visual guidance just like any other monkey. This was certainly unprompted, and in that respect "super" blindsight; but in other respects her capacity for vision was much less than super. For, as I wrote in my case report on Helen (Humphrey 1974), "With the important exception of her spatial vision she appeared to be totally agnosic. After years of experience she never showed any signs of recognising even those objects most familiar to her, whether the object was a carrot, another monkey or myself." She could not even tell the difference between a circle and a triangle. In this respect,

therefore, she was not even the equal of ordinary human blindsight cases – though in other ways her capacity was far superior.

2. Helen did have a tiny tag of visual cortex left apparently intact. If this were functioning at all (which it may not have been), it would have given her a little patch of far-peripheral vision, restricted to the top right-hand corner of the field of her right eye. But to suggest, as Block does, that there is therefore reason to suppose that Helen's visually guided behaviour was a case of *sight*, not blindsight, is completely unwarranted. In my 1974 paper I listed a series of reasons for thinking that her impressive capacity for spatial vision could not possibly have been due to any residual visual cortex – including evidence that she always fixated objects centrally.

3. Helen, when first tested, did confuse auditory events with visual ones. Having been trained to reach for a light, she would try to reach for a sound. But the construction Block puts on this is just the opposite of what I myself originally argued. I never suggested that Helen was having anything like *auditory sensations* when she saw a light. I suggested, on the contrary, that, although she noticed the light, she was having no sensations, not auditory or visual or anything else. As far as she was concerned, the visual event was *amodal:* it might as well have been an auditory one, and so she easily transferred her response from one to the other. (I do not blame Block for getting this wrong, since Cowey & Stoerig's [1992] reference to my unpublished work, which he cites, gets it wrong too.)

On distinguishing phenomenal consciousness from the representational functions of mind

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Abstract: One can share Block's aim of distinguishing "phenomenal" experience from cognitive function and agree with much in his views, yet hold that the inclusion of representational content within phenomenal content, if only in certain spatial cases, obscures this distinction. It may also exclude some modular theories, although it is interestingly suggestive of what may be the limits of the phenomenal penetration of the representational mind.

Including some representational and intentional[1] content within phenomenal content obscures Block's valid conceptual distinction between "immediate," "qualitative," or "phenomenal" experience and cognitive function. It also excludes theoretical alternatives that, in his criticism of the "target reasoning," Block has striven to keep open.

Introspection is often tricky. It is all too easy to misascribe features of our thought and language to less representational aspects of mind. This, I suspect, is what Block and others have done, in arguing from first person examples to the conclusion that "P-consciousness is often representational (sect. 3, para. 3).

Granted that there would be a phenomenal difference between normal seeing and "just knowing" what we normally see in the absence of visual experience, it is less than clear that there would be any similar phenomenal deficit relative to normal people in someone who "just knew" the direction of a sound while phenomenally aware of it as sound but not of its direction. At least I am uncertain whether I am not like that myself. But even if we grant Block that "what it is like to hear a sound as coming from the left differs from what it is like to hear a sound as coming from the right" (sect. 3, para. 3), it need not follow that phenomenal content is sometimes intentional. For one could surely admit that what it is like to be married is different from what it is like to be single without admitting a phenomenal content that is intrinsically social and institutional. Different phenomenal experiences consequent on orienting or attending to the left rather than to the right (and asymmetrical activation of our emotionally asymmetrical hemispheres) when hearing, like different life experiences when married, may constitute the phenomenal differences without our having any special phenomenal-and-intentional representations of leftness or of matrimony. One need not conclude from this case "that differences in intentional content often make a P-conscious difference" (sect. 3, para. 3) by virtue of the P-conscious contents themselves often having "an intentional aspect" (n. 4).

But suppose that a simple phenomenal leftishness does seem to be involved. Although the point will not depend on views about spectrum inversion, among those of us who accept this possibility for phenomenal states generally (including Block 1990a), the point may be conveniently put thus: phenomenal leftishness and phenomenal rightishness could in principle switch their total functional, and hence representational, roles. So these phenomenal contents do not include the intentional contents "from the left" and "from the right" in themselves but at most have only extrinsic functional roles of transmitting this information within the larger system, for which alone, in consequence of their use, they mean from the left or from the right.

The crux of the issue is that intentional content is supposed to be at least rather broadly functional and system-relative, whereas "P-consciousness is not a functional notion" (sect. 4, para. 8). That is why Block believes that phenomenal consciousness, but not access-consciousness, could go on inside a single mental module (sect. 4, para. 8). But since Block also believes that intentionality is functional and system-relative, he should agree that to include intentionality in phenomenal consciousness is *pro tanto* to exclude not only the modularist hypothesis according to which there is a single P-consciousness module, but also all other hypotheses in which each modality or instance of P-consciousness depends directly only on what goes on in some relatively restricted parts of the brain or mind. Moreover, if representational content is determined by the functionality of the organism in its environment, it will generally involve not only much P-unconscious processing but often also much of the external world.

But perhaps the examples Block uses (sects. 3, para. 2 and 4, para. 10, and note 4), which all turn on spatial localization and the like, do point to a way in which we sometimes have some phenomenal sense of "intending" our thought beyond our phenomenal selves. The P-consciousness accompanying attending toward certain regions of space, in perception and in spatial imagination (and perhaps also when we attend to addresses in similar but nonspatial buffers), may be or reflect the demonstrative mental gesture that – by calling on and connecting the right unconscious processors and transducers, with their cooperation and that of the world – makes that mental ostension mean something determinate (not by virtue of how it feels but rather by virtue of its causal relations). At the limit, the phenomenal consciousness of thought may be just the phenomenal consciousness of, so to speak, clicking on a certain region of a spatial or other buffer. (It feels the same whatever mental "hypertext" item is there.) Perhaps this is why some of us find that the phenomenal content of our thinking consists in spatial or motor imagery.

Maybe some such account will some day explain the poverty of the phenomenal consciousness that accompanies representational thought, in contrast to the richness of visual sensation – how it's often only very barely "like anything" at all to think, without any vividly differentiated phenomenal consciousness to match the amazing multiplicity conceptually contained in our phenomenally unconscious representational mind (space perception and motor plans, tailored to fit each other, are commensurate). In the meantime, keeping separate conceptual books for representational content and what seem to be the less holistically mediated phenomena of qualitative consciousness will

avoid prejudging the case against the modular theoretical alternatives. It will also avoid the confusion, under the heading "content," of sensation with thought, and in general of (relatively) unmediated presentation with meaning – the overcoming of which I still regard as the outstanding contribution of the twentieth-century philosophy of mind. But perhaps Block – by limiting the overlap of representation and phenomenal experience roughly to the area we have (following him) just been considering – is showing us how to avoid these pitfalls and how to illumine the interface of experience and function while still saving the phenomenal from more than an acceptably minor and very limited holistic and externalist infection.

NOTE

1. In my discussion of Block I follow his usage of "intentional" for, roughly, "fully representational" – so that all intentional states are representational (see his note 4).

Triangulating phenomenal consciousness

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Abstract: This commentary offers two criticisms of Block's account of phenomenal consciousness and a brief sketch of a rival account. The negative points are that monitoring consciousness also involves the possession of certain states and that phenomenal consciousness inevitably involves some sort of monitoring. My positive suggestion is that "phenomenal consciousness" may refer to our ability to monitor the rich but preconceptual states that retain perceptual information for complex processing.

Block locates phenomenal consciousness by offering two negative contrasts and a positive characterization. The central negative contrast is with "access"-consciousness. Access-consciousness involves highly processed, sophisticated representations whose contents are (1) informationally promiscuous, and (2) available to speech and the rational control of action. By contrast, if phenomenal consciousness involves information at all, it is presumably in some type of preconceptual form.

I find Block's second contrast somewhat puzzling. He suggests that for both "phenomenal" and "access"-consciousness, the primary application is to mental states. So a person is phenomenally conscious by virtue of being in a state that is phenomenally conscious. Conversely, monitoring consciousness is primarily a designation of a creature as self-conscious or reflectively conscious. Yet as Block notes, what it is for someone to be reflectively conscious is for "the person whose pain it is must have another state that is about that pain" (sect. 4.2.2, para. 3).

Although I fear that I am missing Block's real point, his account of the second contrast seems inconsistent, since monitoring consciousness also seems a matter of having certain states; Moreover, it also seems inconsistent with his positive characterization. Block appeals to the familiar "what it is like" locution to give a positive pointer to "phenomenal consciousness." He elaborates by noting that this is the type of consciousness about which philosophers have feared an inevitable "explanatory gap." Notice, however, that if phenomenal consciousness essentially involves what it is like to be in a state, then it concerns some type of awareness of the subject's own states and this would seem to require monitoring consciousness. At least I don't know how to make sense of the "what it is like" locution other than in terms of however inchoate a knowledge or belief about a property of the subject's own states. (Were this lacking, what would be the other *relatum* of the explanatory gap with science?)

Presumably Block's reason for prising phenomenal consciousness apart from monitoring consciousness is that animals can have phenomenal consciousness even though they might lack self-consciousness. If this is so, however, I think that it is only because Block makes self-consciousness a very sophisticated capacity, involving a sense of self. I think a much more natural characterization, and one that Block himself suggests (see above), is that self-consciousness involves having states that are about other states. Although this is an empirical matter, it strikes me as highly implausible that a creature could enjoy phenomenal consciousness – there is something that it is like for that creature to be in certain states – unless it was also self-conscious in this sense of those states.

Let me build on these critical notes to make a brief positive suggestion. On my amended version of Block, phenomenal consciousness involves some type of monitoring of preconceptual states. Block declares his opposition to eliminativism, and it seems safe to assume that he is not an epiphenomenalist either. What, then, could be the function of phenomenal consciousness?

Consider two experiences, viewing the (west) rose window at Chartres from inside the cathedral and hearing the familiar theme from Dvorak's New World Symphony. I choose these examples because they obviously involve the integration of information over time. How can we hear the theme when the first few notes are no longer present except by retaining information about them in some form or other, which then allows us to hear them all together in the aptly named "specious present"? And similarly for the amazing array of colored glass at Chartres; we can see the whole window with its distinctive rose design by integrating a vast amount of color information in a coherent form. These well-known observations tempt me to believe that a classic objection to the representational theory of perception is overstated. We do not see blue by having a blue representation in us. To see the rose window, however, we must have some inner state(s) that can serve as surrogate(s) for a blue array, that can carry the amazingly rich information we extract from arrays of colors. Now let us assume a general monitoring ability – a capacity to have states that carry information about other states, whether or not that information is in the sophisticated form required for reporting. This then would be my candidate for phenomenal consciousness: phenomenal consciousness arises because we are able to monitor our states, including the states that preserve rich, preconceptual perceptual information. This account explains three important facts about phenomenal consciousness and perception: why it is ineffable (because the information is preconceptual); why, when people try to describe what it is like to see blue, they are drawn to characterizations that also fit blue itself – namely, cold, similar to "seeing" purple, and so on; and why the idea that perceiving blue involves a "bluish" state is so natural.

This sketch is probably too deflationary for Block's interests. It implies that phenomenal consciousness involves a mistake – the transfer of properties of objective properties (blue, F#) onto subjective states. Still, it does provide a functional explanation for phenomenal consciousness, since there are functions for both the preservation of sensory information and for monitoring consciousness. In addition, it does not involve the conflation of phenomenal and access-consciousness that is Block's central point, for there is no reason to believe that the contents of states that are about states that retain perceptual information for the construction of rich percepts need be informationally promiscuous or able to guide rational action, including speech. Since (*ex hypothesi*) we are able to make reports about the existence of phenomenal consciousness, such states must lead to more sophisticated states, but that is going to be true on any account.

I close with an obvious objection. This account may not generalize to the other central case of phenomenal consciousness, pains and the like. Although this may be true, even if it is, it does not bother me very much. I see nothing other than philosophical tradition that puts seeing blue in the same cate-

gory as feeling pain. Indeed, as Kant pointed out a very long time ago, there is an enormous difference: pains inform the subjects about their own states, whereas the primary function of visual and auditory percepts is to provide information about "external" objects.

Access and what it is like

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Abstract: Block's cases of superblindsight, the pneumatic drill, and the Sperling experiments do not show that P-consciousness and A-consciousness can come apart. On certain tendentious but not implausible construals of the concepts of P- and A-consciousness, they refer to the same psychological phenomenon.

> Access – your flexible friend.
>
> (advertising slogan for Access credit cards, circa 1981)

When Block's superblindsighter reports spontaneously and reliably about objects in his blind field, his thought, or perhaps better, the nonvisual sensation, the "feeling" that there is an X, is both access-conscious and phenomenally conscious; but what of the underlying state of his perceptual system? Block claims that it would be A-conscious. But it is only in virtue of the underlying perceptual state's causing the thought that "there is an X" that this content is inferentially promiscuous and available for control of voluntary action and speech. The availability is directly in virtue of the thought, and only indirectly in virtue of the underlying state of the perceptual system. Based on Block's own Note 7, therefore, the underlying state of the perceptual system is not A-conscious. Block talks of the *content* being A-conscious, but this is a derivative notion; what matters is which *state* is A-conscious, and the underlying state of the perceptual system does not make itself available.

In the pneumatic drill example, your hearing the noise prior to noon is supposed to be a case of pure P-consciousness without A-consciousness; the sound must have been P-conscious at 11:50, because what you realize at noon is that someone has been noisily digging up the street *for some time*. One alternative explanation is that what you realize at noon is that it is deafeningly noisy and that there has been *no change* in the noise level for some time. So it is not obvious that there is P-consciousness of the noise prior to noon; there may have been habituation, as in the refrigerator example of Note 19, in which, despite habituation, you are aware of a change in the noise level. Yet another alternative explanation is that you had some P-consciousness of the noise but also diminished A-consciousness of the noise simply as a noise, without (prior to noon) conceiving of it as *unusual*, as the noise of a *pneumatic drill*, a noise that *makes it hard to concentrate*, or the noise of *your tax dollars at work*. The nature and degree of minimally conceptualized A-consciousness corresponds exactly to the nature and degree of minimally conceptualized P-consciousness.

In the Sperling (1960) experiments in iconic vision, Block suggests, you are P-conscious of all the letters jointly as specific letters, but not A-conscious of all jointly. This seems implausible as soon as we ask: When? After the icon fades you are no longer P-conscious of all the letters jointly. While the icon is briefly present you do have access to all the letters jointly; how else can you report the existence of three rows of letters, and how else can you select which to attend to? Access to all the letters jointly fades quickly, in step with fading P-consciousness.

Why is it so difficult even to imagine, coherently, P-consciousness without A-consciousness? Perhaps because although there are two distinct concepts of consciousness, they refer to the same psychological phenomenon. With some tweaking of the concepts, this can be seen to be a live option. The identity is quasi-conceptual – not open to direct empirical test. But if the concepts are tweaked in empirically fruitful ways, then we should take them as identifying real psychological kinds. I propose the identity as necessary a posteriori.

One point to begin with is that a state is A-conscious if it is poised or promiscuously available for such inference or action or speech as the particular creature might be capable of. This is consistent with the creature actually having only the most rudimentary reasoning abilities, or its being as stupid or irrational or disoriented as a conscious creature can get, or its being physically incapable of appropriate action, or its being speechless. Access is not diminished merely in virtue of the creature's having less power to reason or act, though the question of why evolution might have put the access there is of course pertinent. Indeed, a state might be A-conscious to a hemisphere, or subpersonal system. The availability, the poisedness, is all; whether it is actually used by a particular creature (hemisphere, subpersonal system) in a manner conducive to survival is another matter. A-consciousness has a teleological function, no doubt, but it is not simply identical to such a function and need not invariably serve it.

A second point is that A-consciousness can be identical to P-consciousness only on a wide construal of P-consciousness. For any A-conscious thought token (e.g., that there are infinitely many twin primes, that God is eternal, that there was once an RNA world), there is something it is like to think it, even if there is no particular image or sensory quality or feeling tone intrinsic to the thought.

A third point is that P-consciousness is a relational notion. To say that a state is P-conscious is to say that it is P-conscious to some person or, perhaps, to some subpersonal system. But no state could be P-conscious to person or subsystem *S* without being poised or promiscuously available for such inference or voluntary action as *S* may be capable of. If one of our own subsystems has, separately, P-conscious states, those states will also be A-conscious to that system (recall that no threshold of actual reasoning power or rational control of action or speech is required). This is not to say that creature P-consciousness is the more basic notion; I agree with Block that state P-consciousness is basic. But I am suggesting, contrary to Block, that no state is P-conscious intrinsically, in and of itself. Any state is P-conscious only in virtue of its relations to a larger person or system.

Finally, we should distinguish a state's being P-conscious from its having any given particular sensory or phenomenal quality. What our thesis identifies with a state's being A-conscious is the fact of there being something that it is like to be in that state, not any of the more particular facts of form: what it is like to be in that state is [. . .]. The thesis does not entail that any particular sensory or phenomenal quality of a state can be identified with or explained in terms of access (or functional role broadly construed) but only that the more abstract or general feature of the state, its being P-conscious, can be identified with or explained in terms of access.

If these points are granted, and I think they are not implausible, then arguments of the following form become live options: (1) P-consciousness = A-consciousness; (2) The teleological functions of A-consciousness are F, G, H, and so on; therefore, (3) the teleological functions of P-consciousness are F, G, H, and so on. Certainly not all defenders of the target reasoning will warm to this reconstruction, but the friends of access may.

Phenomenal access: A moving target

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Abstract: Basically agreeing with Block regarding the need for a distinction between P- and A-consciousness, I characterize the problem somewhat differently, relating it more directly to the explanatory gap. I also speculate on the relation between the two forms of consciousness, arguing that some notion of access is essentially involved in phenomenal experience.

Block argues that conflating A- and P-consciousness is responsible for a "fallacy" in the "target reasoning" that is his target in this article. The philosophers and psychologists in question find that when P-consciousness is missing there is also a certain functional deficit; hence P-consciousness must have the requisite function. However, the functional deficit at issue is itself a lack of A-consciousness, so, Block argues, the inference to a function for P-consciousness is unwarranted.

I agree wholeheartedly with Block's main point that it is necessary to distinguish A- from P-consciousness and that conflating the two is a source of confusion in both philosophical and psychological discussions of consciousness. However, I see the targets and the diagnosis slightly differently, though not, I believe, so differently as to cause serious disagreement.

First of all, as Block himself admits (sect. 6, para. 19), the target reasoning need not be based on a fallacy. Perhaps P-consciousness is causally necessary for the performance of certain tasks definitive of A-consciousness. Certainly the correlation of missing P-consciousness with functional deficiency is *some* evidence for this hypothesis. I suppose Block thinks it is fairly weak evidence, and therefore only conflating the two kinds of consciousness could explain a theorist's drawing the inference. Fair enough.

To my mind, the really egregious target reasoning is the one that infers from the fact that P-consciousness has a function related to A-consciousness to the claim that P-consciousness *just is* a form of A-consciousness. This is fallacious through and through, as Block himself notes (sect. 2, para. 8) in passing. In fact, to say that a state's having phenomenal character performs the function of making it more accessible to reasoning and executive control presumes that phenomenal character itself is not analyzable in these terms. Yet somehow many functionalists seem to take the idea that phenomenal character *plays* a functional role as support for the claim that it *is* a kind of functional role.

So what about the hypothesis that P-consciousness plays the functional role of enabling access to reasoning and executive control? On the surface, there seems something reasonable about this. The more phenomenally aware of a sensation I seem to be, the more access I seem to have to it. But there are two problems here. First, some of the plausibility undoubtedly stems from just the conflation that Block is out to unmask. By saying the "more aware" we are, even if we mean the vividness of the phenomenal character, we inevitably slide into thinking of access. Not only is this illegitimate because of the conflation, but it also shows that we have no real explanation of access here since what we are really saying is that more access buys you more access. Only if we keep the notion of phenomenal awareness pure can it then be used, via an empirical hypothesis, to explain access.

The second problem, though, is the "explanatory gap." Once we accomplish the purification of the notion of phenomenal character, it becomes clear that we really have no idea how its presence could "grease the wheels" of access, because we have no idea what it really is. Unlike in the case of the liquid of a hydraulic computer (see sect. 6, para. 22), we don't understand how phenomenal character could realize mechanisms of information flow. So even the nonfallacious form of the target reasoning – namely, the form that takes it to be an empirical hypothesis that phenomenal awareness enables certain access functions to be performed properly – faces a dilemma: if we focus on a pure notion of phenomenal character we don't understand how it could perform this function, and if we allow a notion of access to sneak in we make the explanation tautologous.

Having endorsed Block's strict distinction between A- and P-consciousness so far, let me conclude by registering some dissatisfaction with it. In diagnosing the conflation of the two, Block blames it on the fact that consciousness is a "mongrel concept." He explicitly compares it to Aristotle's conception of velocity, which didn't distinguish instantaneous from average velocity. But I suspect there is a deeper reason for the conflation, one that has to do with the puzzling nature of phenomenal character itself. That is, phenomenal character seems to be, in itself, a kind of presentation. Experience is essentially connected with a subject for whom it is an experience, and this immediately brings with it a relation of access. Of course this does not entail that all forms of access are involved, so it does not vitiate the point of Block's distinction. But still it does seem that the phenomenon of subjectivity, which is at the core of phenomenal experience, involves access essentially, and it is this fact, I believe, that is responsible for our inability to sharply distinguish A- from P-consciousness.

The essential involvement of access in phenomenal experience is especially noticeable when confronting the examples that are supposed to demonstrate the possibility of P- without A-consciousness. In all of the plausible cases, such as our suddenly noticing a loud noise that has been going on for some time (sect. 4.2, para. 3), it does seem to be a matter of degree of access that has changed. The idea of having an experience that one is totally unaware of (in the access sense of "unaware") just seems downright incoherent. (Of course that does not mean either that phenomenal character is merely a form of access or that it performs the access function the target reasoning assigns it.)

In the end, I think we are dealing with a distinction between forms of access as well as between phenomenal character and access. One form of access is the sort with which cognitive science deals quite well, the sort that is strictly a matter of information flow, which is itself explicable in terms of causal relations. The other is the sort that is inextricably connected to subjective experience. Although it certainly involves information flow in some way, it involves a whole lot more that we do not remotely yet understand.

Access denied

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Abstract: The information processing that constitutes access-consciousness is not sufficient to make a representational state conscious in any sense. Standard examples of computation without consciousness undermine A-consciousness, and Block's cases seem to derive their plausibility from a lurking phenomenal awareness. That is, people and other minded systems seem to have access-consciousness only insofar as the state accessed is a phenomenal one, or the state resulting from access is phenomenal, or both.

"Heel," says Ned Block to the mongrel concept of consciousness, and through a distinction between phenomenal and "access"-consciousness, the unruly beast settles a bit. Although Block's version of the distinction is clear, the conflation of P- and A-consciousness by other authors may not be inadvertent. The authors Block criticizes may intend to analyze P-consciousness in terms of access (or other kinds of information processing), making them guilty not so much of a fallacy as of deliberate

reductive identification. Nonetheless, as Block points out, the differences between P-consciousness and A-consciousness open a significant explanatory gap, not easily spanned by the machinations of information processing.

But are there two concepts of consciousness? In particular, what role does "access" play in the constitution of conscious systems? In section 4, Block calls a state access-conscious if a representation of its content is "informationally promiscuous" in potential reasoning, rational action, or rational speech. ("Rational" here seems to mean, approximately, "potentially highly interactive with other information states of the same general type." It does not seem to suggest normative standards of reasoning or logic.) So, if *a(c)* is a token representation with the content *c*, and as a result of *a(c)* a system can generate other representations inferentially derived from *c* (and other premises), or behave in ways contingent on *c*, then the system has access-conscious states. Specifically, in this case *a(c)* is access-conscious (if I understand Block correctly). In my discussion, I will consider both this position and another with initial plausibility, namely, that access-consciousness is a property of the resultant representations and responses, whose "downstream" states with content or interpretation contingent on *c*.

Many systems meet Block's standards of promiscuity. The computerized card catalog at the Library of Congress, for example, is a rich processor of representations, capable of sophisticated logic and always ready to report on its internal states. Any implemented computer program, for that matter, will exhibit the interplay of information that Block describes. But it seems to me to greatly distort the concept of consciousness to confer consciousness in any sense on the basis of information processes such as these. Promiscuous behavior does not in itself make a state conscious (in any sense). Information with the potential to interact with other information, to control behavior, or to display itself to the world is still just plain information – even in very simple computers information enjoys these sorts of access. Something more than the simple process of access is needed.

What makes Block's examples of access-consciousness plausible as examples of consciousness is that they arise in the company of phenomenal consciousness. There are two possibilities. First, the state being accessed, *a(c)*, may already be a state of (P-)consciousness, in which case A-consciousness should be understood as informationally promiscuous access to a state of consciousness. Alternatively, the states consequent to access may be, for phenomenal reasons, states of consciousness in which case A-consciousness is a property of states of consciousness arising from access to other information states. The two possibilities are not exclusive. A-consciousness might be ascribed to systems where either condition is met. Or both A-consciousness might be the state of a system where states of consciousness are promiscuously accessible to other states of consciousness.

In short, phenomenal consciousness is basic. A-consciousness is parasitic, depending on the existence of states that are conscious not because of processing but conscious "in themselves," states that there is something it is like to be in. By similar reasoning, self-consciousness and monitoring-consciousness are variations of content and functional relations to other states, but insofar as they are states of consciousness at all, they involve states with experimental properties.

Moreover, access (or other processing) does not seem to spread phenomenal consciousness around, as two further cases suggest. Case 1: When I read a book, token representations on the page cause me to enter various promiscuous information states with contents derived from the printed words. The book occupies the role of *a(c)*, yet the representations that cover its pages do not thereby become conscious (in any senses; instead, I have P-consciousness of them, or P-consciousness access to them). Case 2: Imagine a computer equipped to scan and interpret my brain states. Among the states scanned are my P-conscious experiences. Based on its scans, the computer might make inferences about my experience, which it could report to its operators. But none of the computer's internal states would thereby become states of consciousness. Taken together, the two examples further support the conclusion that neither being accessed nor being the result of access constitutes consciousness (in any sense).

Block's thought experiments about superblindsight also depend on phenomenal consciousness. Block allows in section 4.1 that blindsighted patients have conscious thoughts about their world. Once again, these are P-conscious thoughts, whether abstract and propositional ("Hmm, somehow I suspect there is an X to my left") or imaginal (perhaps like an unbidden mental image). Take away these downstream thoughts or images, and what is left? A blindsighted person with no experience whatsoever about the visual stimulus seems to me to be a visual zombie. In the absence of something phenomenal, some experience that is in some way about the visual stimulus, there is simply no visual consciousness there, regardless of conditions of access.

Consciousness is a pure breed after all, and I suggest that Block has committed the very fallacy he critiques, but in the opposite direction. In contrast to sneaking functional access properties into phenomenal consciousness, Block has hidden phenomenal experience in his analysis of access-consciousness. In short, the conscious mind is a collection of experiential states. These states vary in their content, duration, and intensity. They also vary in their promiscuity, but this is not what makes them conscious.

We've only just begun

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Abstract: Block contends that the concept of consciousness is a mongrel concept and that researchers go astray by conflating different notions of "consciousness." This is certainly true. In fact, it is truer than Block acknowledges, because his own notion of P-consciousness runs together two, or arguably three, quite different and separable features of a sensory state.

Block writes:

> The concept of consciousness is a hybrid, or better, a mongrel concept: the word "consciousness" connotes a number of different concepts and denotes a number of different phenomena. We reason about "consciousness" using some premises that apply to one of the phenomena that fall under "consciousness," other premises that apply to other "consciousnesses," and we end up with trouble. (sect. 1, para. 1)

The entirely different senses of "conscious" have been confused with each other because, as it happens in real life, mental contents that are "conscious" in one of the senses are typically also "conscious" in the other.

How true that is. Truer, in fact, than Block has acknowledged. In introducing his notion of "phenomenal consciousness" (sect. 3), he rightly faults Searle's characterization for "point[ing] to too many things"; but his own characterization is subject to the same charge. His term "P-consciousness" comprehends two, or arguably three, different features of a sensory state.

To see this, consider first a third notion of "consciousness" that Block mentions only in passing: introspective awareness, or what he calls "monitoring-consciousness" (sect. 4.2.2). Some of our psychological states are "conscious" ones, in that we are internally aware of being in them, whereas others are un-, sub-, pre- or otherwise nonconscious in that sense. In my view (Lycan, in press), awareness of this sort is fairly literally a matter

of self-monitoring, of mobilizing one's internal attention mechanisms. Note, first, that this notion cuts across each of Block's main two: one may be aware of being in a state, whether or not the state is access-conscious, and one may be aware of being in a state whether or not the state involves any qualitative or phenomenal character. Note too, as Block does, that nothing about monitoring consciousness seems likely to explicate phenomenal character.[1]

What, then, is phenomenal character? First and foremost, I suggest, sensory states involve *qualia* in a carefully strict sense of that unhappy word. The sense I have in mind is roughly C. I. Lewis's (1929) original one, in which a "quale" is the introspectible monadic qualitative property of what seems to be a phenomenal individual, such as the color of what Bertrand Russell called a visual sense-datum. For example, if you are visually healthy and looking at a ripe tomato in good light, the tomato will look red to you, and if you focus your introspective attention on the corresponding subregion of your visual field, you will see it as an individual red patch having a roundish shape. The redness of that phenomenal patch is the quale of the containing visual sensation.[2] One registers such a quale whenever one perceives a colored object as such.

Yet "registers" there is to be understood very weakly. For some of our perceivings are un- or subconscious in the monitoring sense. Armstrong (1980) gives the well-known example of the long-distance truck driver who is absent-mindedly driving on (so to speak) automatic pilot while thinking of something entirely different; the driver "comes to" and suddenly realizes that he has driven for miles without any awareness of what he is doing. Yet he must have perceived the bends in the road, the road signs, the stop lights, and so on. Suppose he did in fact stop at a red light. Presumably the light looked red rather than green to him; that is the only reason he would have stopped. So, in our present strict sense of the term, he was presented with a red quale; a subregion of his visual field had redness as its phenomenal or qualitative character. But the driver was not aware of any such thing; it was an un- or subconscious perceiving (Rosenthal, 1991, makes a similar point).

Yet some philosophers, at least, might be loath to credit the truck driver with having had a sensory *experience* of red; after all, he was entirely unaware of his perceptual encounter with the stop light. There is certainly a sense in which one has not experienced phenomenal red, or *felt* pain, unless one is aware of the redness or the pain. To experience a sensation in that fuller sense, one must both have the relevant quale and notice it introspectively.

What of the pathetic phrase, "what it's like"? It is now ambiguous, as between phenomenal character, namely, a quale in our strict sense, and the conscious experience of such a quale. It is important, both for psychologists and for philosophers, to separate questions about qualia from questions about awareness and monitoring consciousness; and (though I cannot document my claim here) failure to notice the difference has led to some considerable confusion in research on consciousness.[3]

One final distinction: I am among those philosophers who think that qualia are merely the representational contents of the sensations that feature them. As Block says (sect. 3), he disagrees, and holds that *in addition to* such representational contents there are qualia in a more exotic, perhaps capitalized sense: nonintentional, "intrinsic" qualitative contents that outrun the sensations' representational contents (see Block 1990; Peacocke 1983). I find that a weird idea and the arguments for it unconvincing; but if it is true, then there is a third distinct element lumped in under P-consciousness in addition to qualia and awareness: Q-ualia of this new sort.

NOTES

1. Contrary to some philosophers' misreadings of the "internal monitoring" literature, monitoring consciousness or introspective awareness has virtually never been claimed to explicate phenomenal character – though Lycan (1990) invokes a feature of internal monitoring to explain the "subjectivity" of sensory experience, quite a different matter.

2. One need not endorse Russellian sense-datum metaphycis or epistemology in order to use the term "quale" in this way; just think of the color that suffuses a particular subregion of your visual field at such-and-such a time.

3. And Block would do well to note that, in particular, the puzzle of the "explanatory gap" applies to sensory experience of the fuller, attended sort but not, or not obviously, to qualia strictly so-called.

Phenomenal and attentional consciousness may be inextricable

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Abstract: In common sense consciousness has a fairly determinate content – the (single) way an experience feels, the (single) line of thought being consciously followed. The determinacy of the object may be achieved by linking Block's two concepts, so that as long as we hold on to the determinacy of content we are unable to separate P and A.

At the heart of Block's argument is the distinction between P-consciousness and A-consciousness. They are clearly different, and clearly both exist. How, then, could it be anything but a confusion to apply the same word to both? Compare: being the smallest member of the genus that includes lions and tigers, being the most common domesticated mouse-catching animal. These are clearly different and both clearly exist, but it would be crazy to have two words for them, since they apply to the same things. In section 6 Block agrees that the "bold hypothesis" that lack of P-consciousness can be responsible for lack of A-consciousness is not confused (and in sect. 4 he agrees that A- and P-consciousness interact). I expect that several commentators will argue that hypotheses of mutual dependence are in fact more than speculations, and that there are many systematic connections between A and P.

I shall argue for something stronger. Perhaps A and P are conceptually linked. Perhaps we could not have the concept we do of either if both did not exist and were not interdependent. An intrinsic dependence of P on A is suggested by considerations of the many-layered nature of P-consciousness. Consider an example.

Two experts on optical illusions are setting up an experiment involving a number of Muller-Lyer diagrams of various proportions imbedded in various contexts. Their knowledge of visual perception allows each of them to correct for the effect of some of the subtler diagrams so that often the illusion does not work for them (the lines look the same length). Yet these same diagrams sometimes present their illusory appearance. It depends on what each expert is thinking of at the moment. At any time *both* a "same length" and a "different length" appearance are in some sense present. Which one is the way the diagram looks to them, which one is the content of P-consciousness, depends on each person's attention, and on the way perception and actions are being coordinated, in other words on A-consciousness.

Our perceptual experience must always be a tissue of overlapping layers of different, often contradictory appearances resulting from the play of many interacting perceptual subsystems. Color, form, motion, spatial configuration, and facial character are only loosely linked, so "the" way things look at any moment is either highly ambiguous, substantially multiple, or deeply perspectival, where the perspective is given by the aspect of the whole that is at that moment the object of P-consciousness (this fact underlies many of the examples used by Dennett 1991).

One can tell a plausible story, although it is no more than that, about how something similar could happen in the opposite direction. Anyone at any time has many beliefs and desires that are inferentially promiscuous and poised for control of action. Many of them are, intuitively, not conscious. One characteristic

of the ones we consider conscious is that they are the ones involved in chains of inference and means-end reasoning that we are explicitly monitoring and controlling. They are selected as objects of occurrent second-order thinking (see Mellor 1978; Rosenthal 1986). They are parts of chains of reasoning that one is keeping track of roughly as one would a process in the environment. So it is not surprising that such thoughts get colored with qualitative aspects, which identify them in a way that allows them to be tracked. So, on this story, P-consciousness of thought is essential to the functioning of A-consciousness.

Both this dependence of A on P and the reverse dependence, supposing they are real, are contingent features of human psychology. But their effect is to allow us to have a concept we could not otherwise have. For, seen in either A or P terms, consciousness involves an implicit uniqueness condition: *the* way it looks, *the* thought one is thinking. Folk psychology tries to satisfy these conditions by bringing in each concept to reinforce the other: the perceptual P-aspect presented to A-consciousness, the cognitive process which has been given a P-conscious quality. And the result is thus a fused concept: consciousness. (So, if this is right, consciousness is a cluster rather than a mongrel.) In fact, the fusion cannot work; uniqueness is still a myth, even if a generally serviceable one. But if we fall back to the separated A and P components, we will find they are different from any intuitive concept of consciousness. We will find that there is no such thing as the (single) way an experience feels to a person or the (single) content of a person's thinking.

How access-consciousness might be a kind of consciousness

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Abstract: In response to the objection that his "access-consciousness" is not really consciousness but a matter of the availability of certain information for certain kinds of processing, Block will probably have to argue that consciousness in a more basic, familiar, traditional sense is an essential component of any instance of access-consciousness and thus justifies the name.

In the target article, Block himself mentions the following objection to his account of access-consciousness: it can be argued that what Block calls "access-consciousness" amounts to no more than a readiness – a certain representation's being "poised" – for use in information processing, that is, a readiness that we have no reason to describe as a case of consciousness. Thus, Block's discussion of access-consciousness illustrates the error of "referential displacement": in this instance, the not uncommon tendency of psychologists and philosophers to focus instead on something else – something less refractory to their understanding – when they purport to be addressing consciousness.

How is consciousness involved in all those instances of reasoning, reporting, and other rational behaviors that Block insists are cases of a mental state's being access-conscious? How should Block respond to what might be called the access objection? In this commentary, I formulate an answer to the access objection on Block's behalf. However, my answer is critical of Block's position as he has stated it so far. My answer suggests that access-consciousness qualifies as a kind of consciousness for the reason that each instance of access-consciousness crucially involves conscious awareness in the usual sense. Absent such awareness, access-consciousness would not be instantiated.

In response to the access objection, Block could begin by saying, as he does in the target article, that a representation of the content of a phenomenal mental state is necessary for the latter state to be access-conscious. The example I shall use here is of a phenomenal mental state that is access-conscious; perhaps not all access-conscious states are phenomenal: perhaps not all have phenomenal properties as these are explained by Block in his target article. Also, I shall refer to the representation I just mentioned (of the content of a phenomenal mental state) as "the requisite representation," since it is necessary for access-consciousness.

Note that the requisite representation is perforce occurrent. It is itself an occurrent awareness either of the phenomenal mental state or of its object (i.e., whatever the phenomenal state is an awareness of). The requisite representation could not be merely a potentiality for occurrent awareness. The existence merely of a corresponding dispositional representation would not serve to distinguish as access-conscious a present phenomenal mental state, in contrast to previous phenomenal mental states that have occurred in the same individual and whose contents continue to be represented in the form of nonoccurrent, dispositional belief-states possessed by that individual.

Thus, the requisite representation of a phenomenal mental state's content is as much an instance of consciousness as is the phenomenal mental state the requisite representation is supposed to render access-conscious. Both states are occurrent awarenesses of something. The latter statement is typically true; there may also occur phenomenal mental states that are intransitive – that are not about anything, whether real or fictitious. Also, it would seem to be entirely compatible with Block's thinking on this topic that the requisite representation may likewise be a phenomenal mental state.

Moreover, it would seem that the requisite representation must itself be access-conscious. That is, for this representation to enter into the processes of reasoning or engaging in rational behavior, there must in turn occur an awareness of the representation. Otherwise, it would be, from the first-person perspective, as though the requisite representation had not occurred. It would be like a phenomenal mental state's occurring without that state's being access-conscious. Such a representation might have effects on some kinds of behavior or reactions, but those effects would not be of the kind, of course, in which a state of affairs is consciously taken into account.

The need for awareness of the requisite representation becomes especially apparent at the point where Block speaks of first hearing a noise in the absence of any access-consciousness and then hearing the same noise, which has continued, along with having access-consciousness of the noise. From the start of this example, the perceptual mental state involved in hearing the noise would itself be a representation of the noise. Hence a further representation simply of the noise would add nothing unless the noise was now represented differently: as being the object of the respective perceptual mental state: as being a sound that one is now hearing. Contrary to Block's suggestion, a representation that was simply of the noise would not make the perceptual mental state a conscious awareness.

A second representation (beyond the perceptual mental state) that is an occurrent awareness of the perceptual mental state, would correspond, of course, to a familiar kind of consciousness, namely, inner consciousness or direct awareness, wherein the individual has a noninferential, nonobservational apprehension of the occurrence of a particular present mental state. Thus, the present mental state is a conscious, rather than a nonconscious or unconscious, mental state.[1] Similarly, for the requisite representation of an access-conscious mental state's content to function in reasoning and rational behavior, it must be access-conscious: an object of a present occurrent representation.

Block's interpretation of access as a kind of consciousness is persuasive only because the access he has in mind essentially involves consciousness in a more basic sense.

NOTE

1. I should mention that I myself favor a different conception of how a mental-occurrence instance is conscious in the sense of its being the

object of inner consciousness (or direct awareness). Contrary to the various "appendage" theories that are currently popular, I hold that conscious mental-occurrence instances are intrinsically conscious. That is, inner consciousness of them occurs as part of their very own phenomenological structure. However, in my view, not all mental-occurrence instances have a reflective structure in this sense. There occur, for example, reflective and nonreflective instances of visual experience. There may even be both reflective and nonreflective instances of pain and itch.

A-consciousness: The local newspaper of the mind?

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Abstract: A-consciousness may be regarded as the visibility of information that is the output of a process within a community of other processes. The most prominent function of "public" dissemination of information is giving access to it to processes whose relevance is not clear at the moment of dissemination. The function of P-consciousness may be outside the realm of cognition.

I basically agree with Block. Actually, I have been agreeing for a long time. I have made a similar distinction between the phenomenal and the informational aspects of consciousness, in several places (Navon 1989a; 1989b; 1991; 1993). The distinction is especially crucial when one tries to understand the function of consciousness: "it makes a difference whether we ask what is the function of awareness in the sense of information or we ask what is the function of phenomenal experience proper. The problem is that in any empirical investigation . . . the two are confounded. . . . For example, one might suggest that blindsight is a case of lack of experience coupled with availability of information. Actually, however, the ability of the cortically blind to respond properly cannot be taken as evidence that information is disseminated in her/his processing system as much as it is normally. . . . It seems reasonable that blindsight is associated with some malfunction in the flow of information" (Navon 1993).

Let me offer one possible understanding of what Block calls A-consciousness. As I suggested elsewhere (Navon 1989a), awareness, in the informational sense, can be construed as the availability of information about the output of a process for other processes within a community of processes that may exchange information. In other words, awareness in this sense is viewed neither as some sort of module or store nor as availability of information yielded by a process for some other process, like the executive. Rather, it is regarded as accessibility of that information to all other processes, or many of them. Awareness defined in this collective manner bypasses the homunculus problem. Furthermore, it may have an important function, namely, dissemination of information "publicly" within a community of processes that may act on it.

There are several functional advantages of having "public" dissemination of information. The most prominent is securing an outlet for *potentially useful* information. Such information is not clearly relevant for any process in particular but may turn out to be relevant for some processes whose identity is not known to the process that disseminates the information (as when we put an ad in the local newspaper). Consciousness (or, what Block would prefer to call A-consciousness) may subserve exactly that function: the local newspaper of the mind.

Yet newspapers can exist in a community without generating any collective phenomenal experience. So, to the extent that our mind does have phenomenal experience that transcends the information embodied in it (and I agree, of course, with Block that it does), its role in the story of our cognition remains a puzzle. Conceivably, "any *particular* phenomenal experience may not affect the processing to which it corresponds at the moment. However, that does not entail that having the property of being capable of phenomenal experience *in general* does not have any function for the being that has that property" (Navon 1993).

If my hunch is right, the answer should be found in the domain of motivation rather than in cognition. For example, a being that feels an acute pain must behave differently from a being that just cognizes the existence of the pain source, as any dentist can attest and any dental patient would admit. Similarly, a being that feels sexually aroused must behave differently from a being that is just internally informed of the action-readiness of its sex organs, the close presence of a possible candidate for mating, and the desirability of the goal. The evolutionary advantage of those disparities in behavior, or in the tenacity to exhibit the behavior, is evident.

Future computing machines may have the capability for sophisticated information dissemination, which might help them mimic intelligent creatures that have consciousness. In this sense, A-consciousness might be reducible to information-processing terminology. However, can P-consciousness be reduced to information processing? Block is very careful to avoid controversies – a good idea, indeed. So, let me just make a personal statement: I shall be convinced that experience is reducible to information processing as soon as I see the first machine that, in my judgment, is capable of feeling, say, sexual arousal. And since in this domain external symptoms are easy to fake successfully, as demonstrated so compellingly in "When Harry met Sally," I am going to be somewhat more suspicious than Turing[1] would probably be.

NOTE

1. And talking about Turing tests, the discomfort often felt toward them as tests of understanding may be due, in part, to our evidence that understanding, owing as much as it does to underlying information processing is, after all, a sort of feeling. What may pass as a test of capability may not qualify as a test of feeling. Stressing again that Turing tests are meant to test only capabilities seems like a useful byproduct of the explicit distinction between information and experience.

Conscious and nonconscious control of action

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Abstract: I criticize Block's examples of P-consciousness and A-consciousness for being flawed and the notion of A-consciousness for not being a notion of consciousness at all. I argue that an empirically important distinction can be made between behavior that is supported by an underlying conscious experience and behavior that is brought about by nonconscious action-control mechanisms. This distinction is different from that made by Block.

The characterizations of the central notions of this target article are problematic. Block says (sect. 4.1, para. 6) that the state of the superblindsighter who is A-conscious without being P-conscious is not the thought I have an X in my blind field but the "state of [the] perceptual system that gives rise to the thought" (sect. 4.1, para. 6). However, he gives no reason to believe that such a state could be A-conscious in itself, in the absence of the (P-conscious and A-conscious) thought. Why does the superblindsighter need the thought at all if there is some other state that already provides A-consciousness? Perhaps because without the (P-conscious) thought the superblindsighter does no better than an ordinary blindsighter. And a superblindsighter who does not have the P-conscious thoughts but still demonstrates good control of action is actually a zombie. Thus, Block's

example leaves it unclear how there could be a system that is not a zombie but nevertheless manifests A-consciousness without P-consciousness.

The example of a pure case of P-consciousness without A-consciousness is likewise not without flaws. Block invites us to imagine an intense conversation with background noise that is noticed only after it has been P-conscious for some time. However, even when unattended, such noise is used for rational control of action, since the speakers adjust the loudness of their speech in order to be heard. This phenomenon is vividly manifested by people listening to a walkman and shouting embarrassingly loud to overcome background noise that only the speaker can hear. Thus, background noise is very likely to be A-conscious, which makes the example less pure.

Furthermore, I think that the whole notion of A-consciousness is debatable. My position is that P-consciousness is the core of our notion of consciousness. Consequently, I would not like to muddy the waters unnecessarily by the term "A-consciousness," which is something even total zombies have. The confusion that such terminology brings is manifested when Block says (sect. 4.2) that the philosopher's zombies "think but don't feel." I take it that "thinking" is a mental notion that does not apply to systems that are by definition absolutely devoid of any subjectively experienced phenomenological states. If totally nonconscious systems can have mentality, what is the difference between mental and nonmental systems (Searle 1992)? [See also Searle: "Consciousness, Explanatory Inversion, and Cognitive Science" *BBS* 13(4) 1990.]

A scientific research program on consciousness ought to refine but not distort beyond recognition our pretheoretical understanding of the notion of consciousness (Revonsuo 1993). A theory of consciousness should postulate a system that is described at the "phenomenological level of organization" (P-consciousness); the theory ought to account for the lower-level mechanisms that bind this "experienced world" to a seemingly coherent whole, and it ought to explicate the role of this system in the control of adaptive behavior (Revonsuo 1993; 1994). Now, how is the system that has P-conscious properties causally related to nonconscious systems mediating perceptual input and behavioral output? A good example of the system operating in the absence of perceptual input and behavioral output is dreaming (Revonsuo, in press). The mere existence of dreams shows that neither current perceptual input nor behavioral output is necessary for a full-blown experienced world to exist. The brain is generating states closely resembling those caused by external stimulation during waking: "As far as the neurons are concerned, the brain is both seeing and moving in REM sleep" (Hobson 1988, p. 171).

Dreaming seems to be a pure case of P-consciousness without A-consciousness: it has all the phenomenological properties without having any of the normal functional relationships to perceptual input or external behavior. However, if the motor output blockade is removed during dreaming, the person or animal will act out the dreamed behavior in accordance with the dream events (Hobson 1988, p. 150). The observed behavior is in such a case driven by current conscious experience, but it would hardly count as "rational control of action" from an outsider's point of view – people who have REM sleep without atonia often injure themselves badly during attempted dream enactment (Schenk et al. 1986). Thus, there is complex control of action that is the expression of an underlying mental reality but that would probably not be considered A-conscious.

Moreover, Block seems to think (sect. 4.2) that the studies of Goodale and Milner (1992) imply that P-consciousness and A-consciousness might use anatomically different pathways. This hypothesis, however, completely ignores the vast differences between the kinds of action these different pathways support. Block disregards the fact that such object-oriented actions as are realized online by the dorsal system are based on quite limited information and straightforward input-output transformations. By contrast, the goals of action can only be defined with the help of conscious representation of the world (see discussion in Jeannerod 1994). The dorsal system is a slave system for fast and accurate realization of goals consciously determined by other systems. Rather than being an example of distinct neural realization of P-consciousness and A-consciousness, these findings highlight the *qualitative difference* between consciously and nonconsciously driven action systems. The dorsal system appears to be a nonconscious zombie inside our brain, and to ascribe a kind of consciousness to it only obscures the distinction between neural systems that support phenomenological (and mental) properties and those that do not.

I would argue that, as a matter of empirical fact, behavior that is the expression of and supported by an underlying conscious experience is qualitatively different from behavior carried out without any underlying phenomenological or mental reality. This distinction is different from Block's, since it divides behavior with regard to its causal relation to P-consciousness. The above examples show that there can be nonrational (non-A-conscious) complex behavior that is causally related to P-consciousness (REM sleep without atonia), and rational (A-conscious) control of action that is not related to P-consciousness (action guided by the dorsal system in isolation).

It is consequently difficult to formulate the hypothesis I am putting forward in terms of a causal relation between P-consciousness and A-consciousness. Control of action causally related to P-consciousness need not always be "rational," and not all rational action has any connection to P-consciousness. Instead, empirical findings suggest that P-consciousness is causally related to "an entire spectrum of global, integrated, and flexible (nonautomatic) behaviors. . . . It constitutes a central *junction of information*, one in which information from different sources and modalities are integrated to produce a unified and coherent body of behaviors" (Lahav 1993, p. 79). It would probably be right to say that P-consciousness is a (qualitatively distinctive) "gateway to mechanisms of access" (Block, sect. 6, para. 22). This involves no conflation of P-consciousness and something else. Hence, as far as we know the relevant empirical facts, Schacter's (1989) model, by and large, seems to be on the right track.

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Block's philosophical anosognosia

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Abstract: Block's P-/A-consciousness distinction rules out P's involving a specific kind of cognitive access and commits him to a "strong" P-consciousness. This not only confounds plausible research in the area but betrays an anosognosia about Wittgenstein's diagnosis about our philosophical "introspection" of mysterious inner processes.

> We talk of processes and states and leave their nature undecided. Sometime perhaps we shall know more about them – we think. But this is just what commits us to a particular way of looking at the matter. . . . (The decisive movement in the conjuring trick has been made.) (Wittgenstein 1953, p. 308)

Although I do not think this remark is true generally about our talk of mental states – there is nothing particularly mysterious about the computational states of cognitive psychology – it does seem to me to raise a challenge to Block's postulation of "P-consciousness." If all he intends by it is a distinction within

cognitive processing then, of course, it is not worse off than computational states generally: call such a state "*weak* P-conscious." But Block's discussion suggests he has more in mind; call that "*strong* P-consciousness." It is the P-consciousness to which he can only "point": "not a functional notion" (sect. 4, para. 6), it might "have no function" (sect. 6, last para.) or "effect on later mental processes" (sect. 5, para. 5); "it is not easy to see how current approaches . . . *could* yield an account of it" (sect. 3, para. 6); but – almost echoing my epigraph – Block looks forward "at some time in the future, . . . hav[ing] the concepts to conceive of much more about [its] explanation" (sect. 3, para. 7).[1] But what reason is there to suppose that there actually is anything that Block can be taken to be "pointing to" in this way? What reason does he have for thinking he is not in the grip of the picture of the private world that Wittgenstein argued we impose on experience by poor analogy with the public one?

Of course, there are many reasons to distinguish between experiential and nonexperiential states, or, anyway, between introspectible and nonintrospectible ones, as well as between perception and ordinary judgment. Many have proposed capturing these distinctions by a cognitive theory that distinguishes among access relations and different forms of representation. For example, in view of Nisbett and Wilson's (1977) discussion, I develop in Rey (1988) some suggestions of Bach's (1981) and Dennett's (1969; 1978),[2] distinguishing the introspectible in terms of the contents of certain addresses not always accessed in the production of nonverbal intentional action. Building on that in Rey (1992a; 1992b), I try to show how a computational theory could capture distinctions among perceptions and judgments, as well as what's worth capturing about "what it's like."[3] Ericsson and Simon (1984/1993) discuss the processes of introspection and verbal report in greater theoretical and experimental detail, relating these processes to recognition, attention, and structures of short- and long-term memory. One would expect these to lead to some insight into the puzzling cases of blindsight and *petit mal* seizures that are the focus of Block's concern (sect. 6).

But Block strangely avoids such accounts, lumping together under A-consciousness a variety of functional features – inferential promiscuity, "rational control of action," and "rational control of speech" (sect. 4, para. 2) – that they arduously distinguish. At best, he argues against *certain* functionalist proposals, for example, that P-consciousness is a kind of self-consciousness, a second-order thought (sect. 4.2.1), involving an "executive module" (sect. 6, para. 24). But, as the above accounts show, there are heaps more functional and accessibility relations to consider than those! Of course, those accounts are all of weak P-conscious states; Block is after stronger stuff.

But what good would the stronger stuff do? Although Block is right to point out the many confusions and contradictions in a number of the writings he considers, his strong P-consciousness seems only to further confound research. What should we begin to look for as evidence for strong P-consciousness in any of the problem cases he considers? Given that strong P-consciousness may be "without function" or "effect on later mental processes," what possible reason could we have to posit it in anyone's case, even our own?

Indeed, the latter "epiphenomenal" possibility poses a particular problem for Block himself, who sets such store by introspection (sect. 4.2, para. 3). Introspection, after all, is *a kind* of access (or does Block imagine that there could be P-conscious events that are not even introspectible?). If P-consciousness were, for example, "like the liquid in a hydraulic computer" (sect. 6, para. 22), there would still be the question of how its properties could be accessed and represented or otherwise incorporated into someone's mental life. So even strong P-consciousness needs to involve some form of A-consciousness. But then one might wonder what difference the *actual* "hydraulics" would make to introspectors, who could thereby think they were strongly P-conscious without actually being so.

It is difficulties such as these that led me to reject at least strong P-consciousness in the articles of mine that Block cites (sect. 4.2.2, para. 2). To be sure, the above *weak* accounts could also be realized on a laptop. So much the worse, I say, for our indeed "mongrel" notion of consciousness, which is supposed to do not only explanatory but also moral and phenomenological work. There can be little doubt that the weak notion is morally and phenomenologically unsatisfying; but, unlike Block, I am unwilling to let this fact alone – even my lost intense introspective intuitions about the existence of strong P-consciousness – undermine its explanatory work. For the lack of any non-question-begging evidence for the postulation of strong P-consciousness, belief in it would seem no better off than belief in, for example, private devils, a personal soul, or (strong) free will, beliefs also often defended by vivid introspections. What Block needs to show is that he is not in the position of Young's (1994a) painter (sect. 5, para. 7), in his case anosognosic with respect to Wittgenstein's diagnosis of the peculiarly philosophical, but empirically unmotivated, pictures of the mind that tempt so many of us.

NOTES

1. Block does in a note (n. 16) attempt to be neutral with regard to "functionalist" accounts, allowing the possibility that P-consciousness is simply "high quality" A-consciousness, but this seems disingenuous. Throughout most of the target article he writes in this antifunctionalist mode and dismisses a number of proposals that might treat P- as a specific form of A-consciousness (sect. 5, para. 1).
2. Not to be confused with his more recent proposals (Dennett 1991) rightly deplored by Block.
3. Lycan (1990) and Leeds (1992) make similar proposals.

What is an agent that it experiences P-consciousness? And what is P-consciousness that it moves an agent?

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Abstract: If phenomenal consciousness is distinct from the computationally based access-consciousness that controls overt behavior, how can I tell which things (other than myself) enjoy phenomenal consciousness? And if phenomenal consciousness plays no role in controlling overt behavior, how do human bodies come to write target articles arguing for the existence of phenomenal consciousness?

Contemporary philosophers, seeking to associate themselves with the progress now being made in the cognitive and brain sciences, have largely backed away from the venerable but seemingly intractable puzzles concerning the nature of the mental as distinguished from the physical. Many now deny the existence of a problem or suggest that if there is a problem, it is to be solved in the laboratory. There are two risks: such philosophers may be relegating themselves to the secondary role of merely picking among the empirical chips flying out the doors of the neuroscience laboratories; and they may be abandoning a conceptual issue of singular depth and moral import.

Fortunately, a few philosophers, like Block, continue to recognize a problem of consciousness and to struggle toward its clarification. I have been in agreement with Block that the authors who persistently assimilate phenomenal consciousness (Block's P-consciousness) to what Block refers to as access-consciousness (A-consciousness) have only muddied the philosophical waters (see Shepard (1993). Still, Block's own analysis bypasses two issues that cry out for clarification.

What sort of thing experiences phenomenal consciousness? Who or what, exactly, are the entities or agents to which Block would attribute P-consciousness? Do they include only himself (the solipsistic resolution of the problem of other minds), or do

they include other persons, other primates, or individuals of other, more remote species – perhaps ranging down to insects, worms, paramecia, or viruses? Are they necessarily whole individuals (e.g., persons), or do they include brains, cerebral hemispheres, or more localized cell assemblies – perhaps ranging down to individual neurons or even synapses? Are they restricted to natural biological systems, or might they include purely physical systems such as robots, computers, or their various physical components – perhaps ranging down to individual transistors, or even to molecules, atoms, or electrons? (Although widely regarded as absurd, this last possibility is not without eminent sponsorship: "At the very origin . . . each atom . . . must have had an aboriginal atom of consciousness linked with it" (James 1890, p. 149).

In short, where along such series – graded by similarity to the self, by holism, by complexity, or by natural origin – is the line to be drawn between those entities that do and those that do not enjoy (or suffer) P-consciousness? Presumably, A-consciousness, being computational in nature, must peter out as we move to sufficiently simple systems or their subparts, whether natural or artificial. But does P-consciousness in any way depend on complexity? What could be simpler or less "effable" than an isolated twinge of pain or flash of red? If there is no requirement that P-consciousness be externally accessible or reportable, why may not the firing of a single neuron be accompanied by its own private twinge or flash? Indeed, why may not the jump of an electron from a higher to a lower energy state be accompanied not only by the emission of an externally observable photon but also by an internal quale of relaxation? The emitted photon tells us no more about the *quality* of such an inward relaxation than a person's verbal ejaculation "Ah!," or no more than even the more articulate "I just experienced a red flash" tells us about the subjective quality of that experience. To the extent that an agent of any sort is able to externalize anything about its interior events, it is presumably evidence of A-consciousness and not, I take it, of P-consciousness.

How does an agent come to speak of phenomenal consciousness? If it is thus the function of A-consciousness, as distinct from P-consciousness, to control overt action, what exactly is the causal origin of the efferent neural impulses that presumably actuated Block's own fingers (say) when he physically typed out his arguments for the existence of a P-consciousness as distinct from A-consciousness? Block seems to venture perilously close to the problem that has always dogged epiphenomenalism: if conscious experience is merely epiphenomenal, how do our physical bodies ever come to talk about it?

Ethical implications. Can we find defensible grounds for moral action without having unraveled the mind-world knot? A significant onus would seem to attach to the needless infliction of pain and suffering on other entities (whether persons, animals, or machines) only if their pain and suffering is *felt*. In frivolous moments I have been tempted to wonder whether even human beings – irrespective of intelligence, education, or occupation – come in two distinct types: those whose neural activities are accompanied by phenomenal consciousness and those whose neural activities, though seemingly working identically in the physical world, are not. As a simple test for the possession of such a phenomenal accompaniment, we might ask an individual: "When you and I are looking at a surface that we both call red, how do you know whether my subjective experience is the same as yours, and not like the experience you have when we are looking at a surface that we both call green? Or how, indeed, do you know whether I am having any subjective experience at all?" Those who profess to see no problem here might be presumed to be of the second type. Unfortunately, through computations evolved in the service of self-preservation, such individuals might also infer our purpose and dissemble. A pity, really. Otherwise, we could bring the dispute about the existence of phenomenal experience to an end, without ethical qualms, simply by dispatching all those individuals (mere automata, after all) that fail our test.

Blindsight, orgasm, and representational overlap

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Abstract: It is argued that there is no fallacy in the reasoning in the example of the thirsty blindsight subject, on one reconstruction of that reasoning. Neither the case of orgasm nor the case of a visual versus an auditory experience as of something overheard shows that phenomenal content is not representational.

I agree with Block that consciousness is a mongrel concept and I accept many of the points he makes in his excellent target article. I have three critical comments.

(1) *The alleged fallacy in the reasoning in the blindsight example.* Why does the thirsty blindsight patient not reach for a glass of water in his blind field? Answer: the patient lacks consciousness with respect to the blind field. Block claims that this is too hasty and that it fails to distinguish two sorts of consciousness that need to be kept distinct – P-consciousness and A-consciousness. He also says that "there is an obvious explanation of why the patient does not reach for the glass in terms of information about it not reaching the mechanisms of reasoning and rational control of speech and action, the machinery of A-consciousness" (sect. 6, para. 20).

This seems right, as far as it goes. But why does information about the glass not get to the Executive System? That too calls for explanation. The obvious answer, surely, to those who believe in P-consciousness of the sort that Block specifies, is that P-consciousness is absent. P-consciousness, after all, is *preconceptual* experience: it does not involve the Executive System at all. So we cannot plausibly suppose that P-consciousness is missing because information fails to arrive at the Central Processing Unit (CPU). Rather, the explanation is best taken to go the other way around.

Nor does it help to appeal to the missing A-consciousness as an alternative explanation for why information about the glass fails to reach the Executive System. A-consciousness, insofar as I understand it, is just access (of certain sorts) to information. It is no explanation of why information fails to reach the Executive System to say that the access to information is blocked or missing. That is blatantly circular and uninformative.

Of course, it *could* be that some other, as yet unknown, factor is responsible for both the missing P-consciousness and the failure of information about the glass to arrive at the CPU. But pointing to unspecified possibilities in logical space is not to the point in the present context. Inference to the best explanation is always inference to the best available explanation. And the best available psychological explanation, I suggest, of why thirsty blindsight subjects do not reach for the glass of water ultimately adverts (in the way I have specified) to the fact that they lack P-consciousness. I infer that a function of P-consciousness *is* to channel information from the senses to the CPU, for subsequent use there in the production of rational action. Block is mistaken when he remarks that, "the fallacy is: an obvious function of the machinery of access-consciousness is illicitly transferred to phenomenal consciousness" (abstract).

(2) *Orgasms.* I do not see why Block thinks that orgasms present a problem for a representational approach to P-consciousness (sect. 4.2, para. 7). Orgasms are bodily sensations of a certain sort. As such, they can be treated in the same general way as other bodily sensations. To have a pain in a leg, for

example, is to undergo a certain sort of experience. What one experiences is that something in the leg is painful (or hurts). Hurting is experienced as being in the leg (not as being in the head where the experience itself is actually located). Similarly, if one has an itch in a toe, what one experiences is that something in a toe is itching. So an itch in toe (itself an experience) has representational content. Likewise, orgasms. In this case, one undergoes intense, throbbing pleasure in the genital region. What one experiences, in part, is that something very pleasing is happening down *there*. One also experiences the pleasingness alternately increasing and diminishing in its intensity. This too is part of the representational content of the experience. One feels *that* the changes in intensity are occurring. There are, of course, a variety of other bodily sensations that are present during orgasm. But they can be treated in the same general way.[1]

(3) *Having a visual experience as of something overhead versus having an auditory experience as of something overhead.* Block claims this example shows there are phenomenal differences that are not representational. There is supposedly *no* common phenomenal quality to these experiences, even though they overlap representationally. This is not obviously true. What is obviously true is that the look and the sound differ phenomenally. Block says that, in the case he has in mind, one only catches a glimpse so that "the (phenomenal) difference cannot be ascribed to further representational differences" (sect. 4.2, para. 7).

But even if one has no visual experience as of a specific color or shape, there will inevitably be other features one does experience in addition to relative spatial position that are not represented in the auditory experience. For example, one is bound to have some visual impression of the thing's size (tiny as a speck, large as a nearby bird, etc.). Likewise, in the case of the auditory experience, one is bound to have some impression of how loud the sound is. And that will not be represented in the visual experience. So there seems to me no serious trouble here for the representationalist about phenomenal experience. It is also worth noting that an alternative reply is available to the representationalist, one which concedes Block's premise that the two experiences have nothing in common phenomenally. Phenomenal qualities, in the case of perceptual experiences, could be identified with the observational properties represented in the experiences under modes of representation. So, given that the two experiences deploy different modes of representation with respect to the property of being overheard, there will be no shared phenomenal quality, and again no trouble for representationalism.

ACKNOWLEDGMENT

The author is also affiliated with King's College, London.

NOTE

1. For more on the representational content of bodily sensations and a discussion of nonconceptual, representational content, see Tye (in press).

Consciousness is not a natural kind

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Abstract: Block's distinction between "phenomenal feel" consciousness and "thought/cognition" consciousness is a cultural construction. Consciousness (and its "subspecies") is not a natural kind. Some cross-cultural data are presented to support this.

There is much I fail to understand in Block's target article, so my main purpose here is to raise a few questions. Does Block assume that consciousness is a natural kind? And does he aim to give it a further taxonomy? This would explain why "it is obvious that P-consciousness is not a cultural construction," and why he makes a clear distinction between "the concept P-consciousness" and "P-consciousness itself." My next question concerns how words like "phenomenal feel," and "thought" are to be understood. If I am right that Block is looking for natural kinds, the existence of and difference between P- and A-consciousness should be an empirical question. But how could we investigate this? How would Block formulate valid operational criteria to identify a "phenomenal feel" and a "thought" respectively, without presupposing that we already know what these expressions refer to?

I am unable to believe that consciousness is a natural kind (cf. Wilkes 1988). Specifically, I think Block's ideas about P- and A-consciousness are a product of late twentieth-century American thought. He proposes a dichotomy that could, if I had more space, be traced to the mongrel root metaphor of Cartesian dualism and the think/feel dichotomy. My next question therefore is whether it is correct to associate the P-/A- dichotomy with the think/feel pair? I am not a cultural relativist: human beings share more than can be said (van Brakel 1994). But it is an ethnocentric fallacy that diligent research in the behavioral and brain sciences will eventually disclose once and for all the complete taxonomy of human thought, feeling, and action. Block suggests there might be an intimate relationship between A- and P-consciousness; that P-consciousness perhaps "greases the wheels of accessibility," or is the "gateway to mechanisms of access." Or perhaps P- and A-consciousness "amount to much the same thing empirically even though they differ conceptually" or perhaps they are "so entwined together that there is no empirical sense to the idea of one without the other." Although, he gives many options, one, the correct one, is left out: neither P- nor A-consciousness refers to *anything* well determined. Different ideas about consciousness and things like it slide into one another and vary with place and time. There are many similarities, but there is no one true taxonomy. (This is not to deny the value of learning more about it, for example, by analyzing the behavior of blindsight patients.)

Block appeals to introspection as a serious source of evidence for the reality of P-consciousness. Should we also appeal to introspection for the reference of words like "think" and "feel"? And whose introspection is to count? Only those human beings whose commentaries are acceptable for publication in *Behavioral and Brain Sciences*? To press the point further, I will provide some examples of esoteric views on these issues (more details in van Brakel 1994). My question is: what metatheoretic framework can be appealed to for dismissing these esoteric views as serious alternatives to (partial) theories of consciousness and its congeners?

The first point to note is that most Western people are full of talk of how they feel; hence the introspection Block calls upon has no problem associating P-consciousness with all kinds of happenings to them. But this is not as self-evident as it may seem. Gerber (1985) observed that Samoans frequently say, with the full force of self-evident conventional wisdom, "we cannot know what is in another person's depths," or "we cannot tell what another person is thinking." Similar accounts are given by, for example, Howell (1981) for the Chewong people and by Fajans (1985) for the Baining people.

The second point is that if the distinction between thought and feeling, or body and mind, or between the moral and the personal is made very differently or not at all, this will have a profound effect on how introspection guides the development of a theory of consciousness. For example, in Hindi (and Dravidian languages) there is no word that translates as "to feel" (Lynch 1990). The Balinese word *keneh* is glossed as the "feeling-mind" and a popular Balinese proverb as "who can think but with their feelings" (Wikan 1989). The Maori see the "mind" (*ngakau*) as

an undifferentiated whole of cognition, emotion, and volition (Smith 1981). The Temiar people place feelings, thoughts, awareness, and memory in the heart (*hup*), but vocalized expressions are located in the "head soul" (*rewaay*; Roseman 1988). And there are many similar examples (van Brakel 1994). Among Giriama people, the liver and heart are the seat of the innermost sentiments, feelings, desires, and so on; greed and envy originate from the eye; selfhood is located in the heart; the core of an argument is in the liver (Parkin 1985). The Ifaluk people subdivide the *niferash* "our insides" into *nunuwan* and *tip*, which distinguish between socially standard and idiosyncratic "processes"; they fuse thought and feeling and do not distinguish between desire and intention (Lutz 1987).

Perhaps what is wrong is the desire to pigeon-hole everything. Needham (1972), in a detailed study of Nuer, has shown that "belief" cannot be established as a distinct inner state: "inner states are not universals and do not in this sense constitute natural resemblances among men" (Needham 1981). This applies to all taxonomic levels; at no level are there cores or essences of natural kinds, which human beings are trying to grasp. Fear can be the display of instinctive "feel" or can consist solely of thoughts. It is not clear what would be "common to fear of famine and fear of cockroaches, fear of biting a tongue and fear of the dentist's drill, fear of overpopulation and fear of being overdressed, fear of being thought a parvenu and fear of catching AIDS" (Kenny 1989, p. 53). There is not one thing that it is to have fear, or that is prototypically fear. Levy (1984) says about "fear" and Tahitian *ri'ari'a*: "the central tendencies named by various emotional terms are probably universal but . . . the borders of the categories may differ." But who is judging in which direction the *central* tendency is going? Levy tells us about *ri'ari'a* that [1] it only names "fear as present experience," not "anticipatory fear" (which is *mata'u*), and [2] *ri'ari'a* also "includes mild aversions to certain foods." Now who is to say that "present experience" or "mild aversion to certain foods" is not part of the "central tendency" of "fear" (and all words from other languages that are usually translated as "fear")? Who is to say, and on what grounds, that "phenomenal feel" is not part of the central tendency of cognition?

Should we continue to study consciousness?

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Abstract: Block has attempted to reduce the confusion and controversy concerning the term "consciousness" by suggesting that there are two forms or types of consciousness, each of which has several characteristics or properties. This suggestion appears to further becloud the topic, however. Perhaps consciousness cannot be defined adequately and should not be considered as a topic that can be studied scientifically.

Block considers consciousness to be a "mongrel" concept. Mongrels, either as animals or concepts, are not all bad. There is a less pejorative animal metaphor that has been used to compare Linus Pauling's extremely influential concept of structural resonance to a mule, which is not a horse part of the time and a donkey part of the time but a mule all of the time. Block's mongrel of consciousness is not a blend but an assortment of different breeds, since he stated that "there are a number of very different 'consciousnesses'." The target article makes a convincing case that the literature abounds with conflicting meanings of the same word, and that when different writers refer to "consciousness," they may be referring to different entities. Recognizing this difficulty, and the harm that this does to coherent and rational dialogue, Block suggests what to me appears to be a poor solution to the problem. He suggests that there are two categories of consciousness, P-consciousness (phenomenal consciousness) and A-consciousness (access-consciousness). This suggestion may compound rather than resolve the confusion of terms. Leaving the problem of conflicting meanings aside for the moment, Block states that "I cannot define P-consciousness in any remotely noncircular way," and that "really all one can do is point to the phenomenon" (sect. 3, para. 7). He indicates that one way of pointing is to use "rough synonyms," such as his statement that P-consciousness is experience, so that "a state is P-conscious if it has experiential properties." The P-conscious properties of consciousness were stated to include the experiential aspects of sensations, feelings, and perception, as well as thoughts, wants, and emotions. This list leaves us with a series of subjective states, some of which are almost as hard to define as consciousness.

The requirements used to characterize "A-consciousness" are no clearer. To avoid possible misrepresentation of this crucial characterization, I will quote from Block.

> A state is access-conscious (A-conscious) if, in virtue of one's having the state, a representation of its content is (1) inferentially promiscuous (Stich 1978), that is, poised for use as a premise in reasoning, (2) poised for rational control of action, and (3) poised for rational control of speech. (I will speak of both states and their contents as A-conscious.) These three conditions are together sufficient, but not all necessary. I regard (3) as not necessary (and not independent of the others), because I want to allow that nonlinguistic animals, for example, chimps, have A-conscious states. (sect. 4, para. 1)

I have doubts that reasoning uses representations of any conscious state as premises – indeed I am not sure that I know what it means to use a subjective state as a premise. As for the second characterization, I am not sure that I understand what is meant by rational control of action – could not a conscious state be used for an irrational control of action? As for the third characteristic, I am confused by the term "rational control of speech." Leaving aside what is meant by "rational," what aspects of speech is Block referring to?

Since this contribution is to be evaluated in terms of its contribution to science (as implied by its appearance in a journal using "science" in its title), the clarity and lack of ambiguity in its terminology and concepts are of the utmost importance. Block is well aware of the need to clarify the concept of consciousness. Indeed, in the final paragraph of the target article he states "My purpose in this target article has been to expose a confusion about consciousness." He has succeeded in his attempt to expose the confusion of others who have dealt with the topic of consciousness. However, I believe his article has added its own confusion to this difficult and dismal topic. As Block points out in his introduction, in the seventeenth century Florentine Experimenters used a single term for temperature and for heat, generating paradoxes, and there is a similar problem with "consciousness," that is, "very different concepts are treated as a single concept" (sect. 1, para. 1). Block's attempt to clarify the topic by stating that there are two types of consciousness does not solve the problem. If so much confusion abounds in dealing with what is meant by the term "consciousness," perhaps it is necessary either to abandon the topic completely, or to exchange the terms and concepts for others that are unambiguous.

In his preface to the *Elements of Chemistry,* Lavoisier (1790/1965), who is considered the father of modern chemistry, stated that advances in science require that clear and unambiguous terms be used, and that terms that "suggest false ideas" be abandoned. He quoted liberally from the Abbé de Condillac, including his statement of the "impossibility of separating the nomenclature of a science from the science itself," and "we cannot improve the language of any science without at the same time improving the science itself; neither can we, on the other hand, improve a science, without improving a language or nomenclature that belongs to it. However, certain facts of any science may be, and however just the ideas we may have formed

of these facts, we can only communicate false impressions to others, while we want words by which these may be properly expressed.

More on prosopagnosia

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Abstract: Some cases of prosopagnosia involve a highly circumscribed loss of A-consciousness. When seen in this way they offer further support for the arguments made in Block's target article.

I agree with the thrust of the target article. Consciousness can have different meanings, and it is easy to conflate them. Block's paper helps considerably in tidying up, but I am going to try to push the argument further. Some cases of prosopagnosia seem to me good examples of domain-specific loss of A-consciousness, yet they are not discussed quite like this in the target article.

Most prosopagnosics also suffer some degree of general visual impairment, and this must affect P-consciousness. Even so, loss of recognition is not always directly attributable to the visual impairment, since comparison can be made to people with equally or more severely impaired vision and no prosopagnosia (De Renzi 1986; McNeil & Warrington 1991; Young & Ellis 1989).

There are also a minority of cases with only minimal visual problems, and hence what seems pretty normal P-consciousness. Consider Mr. W (Bruyer et al. 1983), one of the most thoroughly documented cases in the literature. Although he could not recognise many familiar faces, Mr. W would make accurate copies of line drawings of faces, identify the sex of faces when a hood covered the hair, correctly interpret facial expressions, and decide whether photographs of unfamiliar faces showed the same or different people. For all these tasks, Mr. W performed as well as normal control subjects.

Cases like Mr. W make it difficult to argue that prosopagnosia must always be linked to any major impairment of P-consciousness; when Mr. W looked at faces, we have no grounds for thinking he saw them very differently from how you or I would see them. Yet Mr. W often had no sense of who the person might be; in Block's terms, this is a failure of A-consciousness with relatively intact P-consciousness. I say *relatively* intact because some aspects of P-consciousness will necessarily be altered; for example, the prosopagnosic person will no longer experience any sense of familiarity when looking at known faces. This is what seems to make Block hold back from this interpretation in the target article. But these changes in P-consciousness are simply consequences of the loss of recognition. There is no pervasive inability to experience familiarity in prosopagnosia; voices, objects, and other recognisable things seem perfectly normal and familiar. Hence, it is reasonable to consider such cases as primarily involving failures of A-consciousness. This interpretation is strengthened by the findings of covert recognition mentioned in the target article, but it can hold without them.

Such failures of A-consciousness can be highly circumscribed. One of De Renzi's (1986) cases could find his own belongings when they were mixed in with similar objects, identify his own handwriting, pick out a Siamese cat among photographs of other cats, recognise his own car without reading the number plate, and sort domestic coins from foreign coins. In all of these tasks he was therefore able to identify individual members of visual categories with high interitem similarity, yet he could not recognise the faces of relatives and close friends. Just as strikingly, the deficit can affect mainly *human* faces; when McNeil and Warrington's (1993) prosopagnosic patient took up farming, he was able to learn to recognise his sheep, and correctly identified several of them from photographs of their faces!

If I am right that prosopagnosia can involve a selective loss of A-consciousness, it fits Block's argument perfectly. Despite their relatively preserved P-consciousness, prosopagnosic patients do not act as if they recognise faces in everyday life.

Examples abound in the literature. Block notes that LH's girlfriend wore a special ribbon so he would know who she was. A young girl we studied for several years would not recognise even her own mother if she came to her school unexpectedly, but would know her immediately once she spoke (Young & Ellis 1989). Newcombe et al. (1994) described some of the problems experienced by a retired mathematician who had been prosopagnosic all his life:

> At the age of 16 years, while on holiday, he stood in a queue for 30 min next to a family friend whom he had known all his life, without any experience of familiarity. The friend complained – mildly – to his parents and his father reacted strongly to this apparent discourtesy. Soon after, cycling from the village to his home, he saw a man walking toward him. In his own words: "Mindful of my father's recent forceful comments, I decided to play it safe. As we passed, I said "Good morning, Sir." My father said later that I had never addressed him as politely before or since." (Newcombe et al. 1994, p. 108)

This holds even for the cases with covert recognition. PH, who has cooperated with my colleagues in an investigation which has also lasted for many years, does not act as if he can recognise us, even though he shows covert recognition of our faces (de Haan et al. 1987). So in prosopagnosia one finds precisely the loss of intentional actions based on recognition that Block would predict to follow from loss of A-consciousness. This offers further support for the arguments made in the target article.

But there is a caveat. We should not conclude that P-consciousness is entirely unrelated to intentional action. Isn't it P-consciousness that gives us the confidence to act? Let's create a simple example of A-consciousness without P-consciousness. Suppose I invented a totally transparent plastic and used it to make a bridge over a ravine. If I tell you where the bridge is, would you be willing to step on it even though you can't see it? I think you would be reluctant, and you would probably try to touch it or gain some other form of P-consciousness of its existence. Similarly, doesn't the lack of P-consciousness contribute to blindsight patients' thinking their answers are guesses?

I'm not trying to imply that P-consciousness is performing any indispensable role; but it may have its uses.

Feeling of knowing and phenomenal consciousness

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Abstract: In Feeling of Knowing cases, subjects have a form of consciousness about the presence of a content (such as an item of information) without having access to it. If this phenomenon can be correctly interpreted as having to do with consciousness, then there would be a P-conscious mental experience which is dissociated from access.

Suppose someone seen and known a long time ago comes to play some role in one's reasoning processes. Usually a wealth of information about that person is stored in long-term memory. Seeing her face again triggers some specialized module (say, face recognition) but one cannot recall her name, though one has the "feeling of knowing" that name. When cued (with the first letter of the proper name) one is able to recall the name itself. A small-

scale binding problem is solved: a lexical module is activated and the integrated information from different modules finds its way to the Executive System. There is an experiential quality throughout this story: one "feels one knows." The phenomenal consciousness is an awareness of an item one cannot focus on with enough resolution to be able to identify it, of having "access" to its representation in memory. When the retrieval is successful, P-consciousness is indistinguishable from A-consciousness. In all cases in which for some reason or other the retrieval is not successful, we experience a separation between phenomenal and access-consciousness.

A weakness of Block's target article is the relative paucity of empirical data alleged to distinguish the two functions of consciousness. We suggest that a frequent phenomenon, experienced by most people at some time or other, can be seen as empirical support for the reality of Block's distinction. The phenomenon has been variously termed "Feeling of Knowing" (FOK), "tip of the tongue experience" (when the item to be retrieved is a lexical one), and so on. It is the rather common situation in which subjects who are asked to recall some item they have "stored" in memory cannot recall it but have the distinct feeling of knowing it without being able to identify it. Several experiments indicate that the item is indeed present in memory: the majority of the subjects when cued or prompted with some partial information (such as the first letter of the word to be recalled or something along those lines) is able to retrieve the "missing" item with a rate of success which is generally above purely random guessing rates (see Hart 1965; 1967; Schacter 1983; Schacter & Worling 1985).

In FOK situations we are in a P-consciousness state without being simultaneously in an A-consciousness state, for while the experience is there, the content is not available to conscious thinking, planning, reasoning (hence FOK states fail Block's test for A-consciousness, sect. 4). FOK states can be described as states of awareness of the *existence* of a content but not *of* the content itself. Discussion of FOK phenomena in the literature revolves around two main axes of explanation: the trace-based view, which posits the existence of an internal monitoring system, or, alternatively some form of retrieval procedure based on inferential and contextual knowledge (see Koriat, 1993, for a critical discussion of the two approaches). Neuropsychological studies on impaired patients have tentatively connected deficits in the reliability of FOK judgment with a metamemory impairment brought about my frontal lobe lesions (see Janowsky et al. 1989; Shimamura & Squire 1986).

If this piece of empirical evidenced is correctly interpreted as a case of P-consciousness *without* A-consciousness, it does present some reason to distinguish model 1 (see Fig. 1 in target article) from the others and their variants. Indeed, if taken at face-value, it supports the idea that P-consciousness does have a function. One possible hypothesis about FOK is that the P-conscious mental states are cases of partial integration of information. Being partial integrations, FOK states fall short of being capable of activating A-consciousness (they are not inferentially promiscuous and they do not trigger the executive functions). FOK states appear to be ones in which information is processed on the basis of cues and contextual elements. Though P-conscious, they are unable to reach the Executive System of Schacter's (1989) model because of memory retrieval failure of some sort. This "failure" to access the Executive System is normally short-lived, but it can last longer as some pathologies show. But even by itself P-consciousness would have the role of gateway to the access-consciousness machinery.

The point made here is limited to FOK. It suggests that there is a functional role for P-consciousness. However, in agreement with Block, our understanding of this function (if there is one function of P-consciousness) is so poor that a variety of investigations will have to be carried out before we come to something close to scientific plausibility for our claim. The phenomenon itself is there (we tend to trust introspection in this regard) but it may very well turn out to be epiphenomenally supervenient on an array of mental states and operations, each having its own function wholly separated from the quality of our experiences.

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A Zombie – a thing that has no experiences, no one home in there – lacks something, and that something is consciousness. Does it lack more than one thing? Even if it is not as inert as a rock, but as behaviorally capable as ourselves (including our ability to speak and reason): if it is indeed a Zombie, it is a Zombie. There is no point in saying, say: "It knows but it cannot feel." What could that mean? I think I know where we get these incoherent, peekaboo intuitions about the mental life of things that, by hypothesis, have no mental lives at all: We get them from our own experiences of knowing, not-knowing, or just-barely-knowing things. But none of this can be legitimately attributed to the Zombie. The Zombie is not like us when we know something, but we don't know we know it, because it isn't like *anything* to be that Zombie, whereas there is something it's like to be what we are when we are in any of our various mental states. To put it more specifically: there's something it's like to know (believe, mean, etc.), just as there is something it's like to see and feel and want – indeed, there's something it *feels* like to know (or not-know, or barely-known, or just-realize-you-know, or be-able-to-do-without-quite-knowing-how). You might just as well substitute "feels-like" for "like" in all the "something-it's-like" locutions. The rest is just the details about what you happen to know or not-know, which is to say: about whether it feels-like *this* or feels-like *that* to be you. The invariant in all this is that it always (when you are alive and not obtunded) feels like *something* to be you, feeling/knowing whatever you feel/know (and being able to do whatever you can do, while feeling, usually, that you know *how* you do it – whereas of course if you really knew how you do it, there would be nothing left for cognitive scientists to do). Access to anything like *that* is denied completely to a Zombie by hypothesis, and *that's* consciousness. Apart from that, what is there? You can't be a partial Zombie, after all (and neither the blindsight patient nor the epileptic is a partial Zombie, make no mistake about it, otherwise all of us are, trivially). And if the inert, terminal-coma patient is indeed a Zombie, then he's gone. He's got access to nothing, just like the hypothetical dynamic, behaviorally capable zombie who might be chatting with you right now. The only one with "access" is the one with the consciousness, and the only thing he has access to is whatever he is ("phenomenally") experiencing; the rest is just the details about what and when he is and is not experiencing. For his Zombie counterpart, talk about access to data, if you like, and consequent performance capacity (be it ever so super-duper), but forget about consciousness; there's no one home in there. – Ed.

Author's Response

How many concepts of consciousness?

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Abstract: With some help from the commentators, a few adjustments to the characterizations of A-consciousness and P-consciousness can avoid some trivial cases of one without the other. But it still seems that the case for the existence of P without A is stronger than that for A without P. If indeed there can be P without A, but not A without P, this would be a remarkable result that would need explanation.

I learned a great deal from the commentators about ways in which what I said was wrong or easily misunderstood. I

am grateful for the opportunity to rethink and rephrase in response to the criticisms. A number of superb commentaries also had to be held over to a future issue, and I look forward to grappling with them as well.

R1. Is P-conscious content just highly informational content?

Armstrong accepts P-consciousness but says it is "a species of representational content of a particularly detailed sort." **Farah** notes that perception in blindsight and other such cases is degraded and concludes (here and in other publications) that P-consciousness depends on quality of information representation. [See also Farah: "Neuropsychological Inference with an Interactive Brain" *BBS* 17(1) 1994.] **Dennett** says that my A/P distinction should really be seen as a continuum, a continuum of richness of content and degree of influence. He says I am "inflating differences in degree into imaginary differences in kind." In Note 16 of the target article I suggested that some functionalists "will see the distinction between A-consciousness and P-consciousness primarily as a difference in degree rather than in kind." But I was alluding to degree of access, not degree of informational content. I think the high degree of information views of P don't get to first base.

To see what is wrong with highly informational representational content as a substitute for P-content, consider the common types of blindness in which the (legally) blind person is able to distinguish a few degrees of light and dark, much as you or I can with our eyes closed. *This is P-conscious content that is relatively informationally poor, not informationally rich.* Furthermore, senses can differ in information richness without differing in phenomenality. Perhaps taste (not including smell via the mouth or mouth feel) is less rich than vision (Kapsalis 1987, p. 66). But is taste any less phenomenal than vision? Or consider orgasm again. Are we supposed to think that orgasm is informationally rich? **Tye** has made a valiant attempt to characterize (partially) the phenomenal content of orgasm in representational terms: something that is very pleasing (and changes in intensity) is happening down there. Even if this does capture the phenomenal content of orgasm (which I don't believe for a second), this is not a very informationally rich content. Yet there can be no doubt that orgasm is "phenomenologically impressive"!

Weiskrantz (1988) notes that his patient DB had better acuity in some areas of the blind field (in some circumstances) than in his sighted field. Suppose a blindsight patient with fairly good acuity in the blind field were to become near-blind in the sighted field, able to distinguish only a few shades of light and dark. He experiences the light and dark but does not experience the blindsight. The blindsight is informationally richer but (presumably) not phenomenal, whereas the near-blind vision is phenomenal and informationally poorer.[1]

Dennett describes the informational content of blindsight as "vanishingly" small. In Dennett (1991), he emphasizes the cases in which the blindsight patient is given a forced-choice, for example, an X or an O. But blindsight patients can exhibit contents that have more informational value than that. In Pöppel et al. (1973), the first human blindsight study, the patients were asked to move their eyes in the direction of the stimuli that they apparently had no experience of seeing. The patients could do so even though they thought they were guessing. In addition, as I mentioned in the target article, blindsight patients can catch a ball thrown in the blind field and can shape their hands appropriately so as to grasp an object presented in the blind field. The information involved in these nonphenomenal activities is surely at least as great as the phenomenal discriminations of the blind people just mentioned or of some sighted people with their eyes closed. In addition, the implicit prosopagnosics mentioned in the target article have the capacity to recognize un-P-consciously the face of, say, John Wayne. I skipped over most of the empirical literature on this topic for lack of space, but let me just mention one phenomenon:

Semantic priming is a phenomenon in which the presentation of one stimulus facilitates the subject's response to a related stimulus. For example, if normal Americans are asked to press a button when a familiar face appears in a series of faces presented rapidly one after another, the subject tends to press the button sooner if a related name has been presented recently. For example, "Reagan" facilitates reactions to Bush's face. Likewise, one name primes another and one face primes a "related" name. Here is the result: in a few prosopagnosics who have been studied in detail and who exhibit some of the other indications of "covert knowledge" of faces, faces prime related names despite the prosopagnosics' insistence that they have no idea whose face it is. For example, Lady Di's face primes Prince Charles's name even though the subject insists that he does not know whose face it is. See also the phenomenon mentioned by **Graham.** The perceptual content that it is Lady Di's face is moderately informationally rich, but this is not a P-conscious content. So once again, we have moderate informational richness without P, contradicting the point of view of **Armstrong, Farah,** and **Dennett.**

Dennett constructs a thought experiment, a superblindsight patient who comes to be able to tell us – effortlessly – very detailed facts about the visual properties in his blind field. He can tell us that there is a bright orange Times Roman italic X on a blue-green background about 2 inches high with a smudge. This superblindsighter says that he knows these sorts of features of stimuli in his blind field, even though he is just guessing, and contrasts what is going on with the real visual experiences of his sighted field. Dennett rightly says that it is hard to swallow that "anybody who could gather that much information from a glance" might have no visual experience. And he adds, imagining another patient, that if all he can tell us about the sighted field is that he saw an X rather than an O, we would be baffled by his claim of P-conscious experience.

Dennett is on to something here, but he has misdiagnosed what it is. There is some plausibility in the idea of high-information representational content as an empirically *sufficient* condition of phenomenality in humans (though not a conceptually sufficient condition). But there is no plausibility at all to the idea that high information content is a *necessary* condition for phenomenality, as is shown by the example of orgasm and the discrimination of a few degrees of light and dark with one's eyes closed. I think that the reason for the plausibility of Dennett's examples is that they illustrate *depictive* or *pictorial*

representations. And it is very tempting to believe that pictorial visual representations must be P-conscious. That explains Dennett's first example. In the second example, if we think of the person as having a pictorial representation of an X, it is hard to imagine how the person could see the X without seeing it as having some particular size, typeface, color, and so on (hard only because one naturally but wrongly thinks of images as photograph-like; see Block 1983).

However, even mental images can apparently fail to be P-conscious. Cooper and Shepard (1973) noted that when subjects practiced image rotation to the point of automaticity, they reported that they had no image experiences, yet the rotation data argued for the same images as before (I am indebted here to Baars 1994). Kosslyn (1980; 1994) asked subjects to zoom in on an imagined map to the point where they could only see a part of it. It would be interesting to see whether these subjects could make use of the information in the "invisible" parts of the map better than subjects who had not just had those parts in the mind's eye.

So far I have been criticizing the view that P-content = highly information content, the view of **Armstrong** and **Farah,** but not quite **Dennett**'s view. Dennett also mentions access. But how is access supposed to figure? Is P-content content that is *both* highly informational *and* highly accessible? If so, the legally blind contents I mentioned are a counterexample since though they are highly accessible, they are low in information. Or perhaps the mode of combination is disjunction rather than conjunction: P content is content that is high in information *or* high in accessibility. But now the P-unconscious images are a counterexample in the other direction. Furthermore, everyone has relatively high information but quiescent beliefs and desires that are not P-conscious.

R2. Does P exist?

Rey says it is strange that I did not explicitly consider any of the accounts that have been offered of P-consciousness in computational terms. This was an explicit strategic decision. Not everything can be discussed in every paper. This one was about some distinctions and how missing them causes trouble. In other papers I have discussed some computational (functional), intentional, and cognitive theories of P-consciousness. Rey says that the assumption of P-consciousness as noncomputational and noncognitive impedes research. That depends on whether P-consciousness *is* noncomputational and noncognitive. If it is, then Rey's assumption that it isn't impedes research. Rey assumes that the right approach to consciousness is that of computational and cognitive psychology (computational in this context = functional; see Block 1994). But why does Rey ignore the neurophysiological approach? The sort of research program described, for example, in Crick (1994) does not accept Rey's assumption, yet it seems to be going somewhere. Rey admits that phenomenal consciousness deflated so as to be amenable to computational analysis of the sort he favors is "phenomenologically unsatisfying," but he persists because he knows of no non-question-begging evidence for the postulation of P-consciousness as distinct from computational notions. I find Rey's stance baffling. Let's look at a specific example. Above, I discussed the idea that P-conscious content is simply highly informational content. I appealed to the evidence of our own experience: when you close your eyes, you can nonetheless distinguish a few degrees of light and dark via truly phenomenal experience, so phenomenal experience can be low on the informational scale. Does Rey propose that we should ignore the evidence of our own experience in cases like this? To do so would be "phenomenologically unsatisfying" in a way that carries some weight, namely, it ignores a source of evidence that we all have from our own experience.

Rey is worried about conundra involving epiphenomenalism, zombies and such, and to avoid them he wants to reduce phenomenal consciousness to the computational. If P can be functionally defined, epiphenomenalism is ruled out and zombies are impossible. But this is the wrong way to avoid the conundra. Russell once hypothesized that the world was created five minutes ago with all the evidence of an age of many billions of years. Some philosophers have wanted to avoid this possibility by defining the past in terms of its effect on the present. To say that there were dinosaurs 65 million years ago is to say there are dinosaur-signs now. But this is a foolish metaphysical over-reaction. Better to face the conundra head on as discussed below in section R13.

R3. Is A-consciousness consciousness at all?

Graham, Lloyd, Natsoulas, Revonsuo, and the **EDITORIAL COMMENTARY** question whether A-consciousness is consciousness at all. As Searle (1992) emphasizes, a zombie that is a functional duplicate of us but lacks any P-consciousness is not conscious at all. (This point is made forcefully by Tyler Burge, forthcoming.) But it is a mistake to jump from the idea that a zombie is not conscious in any sense to the idea that A-consciousness is not a form of consciousness. A-consciousness can be a kind of consciousness even if it is in some way parasitic (as Burge, Lloyd, and Revonsuo rightly say) on a core notion of P-consciousness. (A parquet floor is a kind of floor even though it requires another floor beneath it.) A-consciousness can come and go in a background of a P-consciousness person (that is, a person who sometimes has P-conscious states). Suppose a drunk becomes "unconscious." He may have P-conscious states both before and during his episode of unconsciousness; for example, while unconscious he may be seeing stars or having mental images of various sorts. I don't want to try to specify exactly the relation between being unconscious in this ordinary sense and the concepts of P and A, but roughly, I think we count the drunk as unconscious to the extent that he has no A-consciousness of the environment via P-conscious perceptions of it. The drunk is A-unconscious in a way the specification of which involves appeal to P.

We tend to deploy the concept of A-consciousness in describing unconscious phenomena, so it is not surprising that many of the most common uses come in at a somewhat theoretical level. Consider, for example, Freudian unconscious states. Suppose a person is tortured horribly in a cinnabar room (a particular shade of orange-red). The cinnabar color symbolizes the pain and is repressed. He remembers the torture vividly but denies remembering the color of the room. Nonetheless, the memory of the color comes out in slips, associations, dreams, and so on.

For example, he dreams of horrid cinnabar things. When he is in a cinnabar room he shudders violently and comes up with an excuse to leave, but does not recognize why. There is nothing in Freudian theory or common sense that precludes repressed phenomenal color images of the room. In fact, we can imagine the patient realizing this himself after years of psychoanalysis. "I had a cinnabar image all the time that I would not let myself acknowledge." Whether or not this actually occurs, it makes sense for there to be a blockage that keeps a phenomenal color image from being informationally promiscuous. So the sense in which repressed memories are unconscious is A-unconscious. The Freudian type of unconsciousness does not *require* P-unconsciousness, but it does require A-unconsciousness.

Similar points apply to neurological syndromes such as prosopagnosia, in which the patient is not "conscious" of whose face he is seeing, even though he reveals in a variety of experimental circumstances that the information is unconsciously represented. The unconsciousness is A-unconsciousness. It isn't the presence or absence of a feeling of familiarity that defines prosopagnosia but rather the patient lacking A-consciousness of the information about the identity of the person. As **Young** notes, the lack of a P-conscious feeling of familiarity is (normally) a consequence of the lack of A-consciousness, but is not a defining feature of the syndrome. This point is nicely illustrated by Young's theory of Capgras's delusion, a syndrome in which patients claim that people whom they know (usually friends and relations) have been replaced by aliens who look just like them. Young (1994c) provides evidence that what is going on is that the subject recognizes (say) his mother, but he gets no feeling of familiarity from the perception, so he supposes the person is not really his mother. (It may be that victims of Cotard's syndrome, in which patients think they have died likewise, lack this feeling of familiarity, but blame it on themselves instead of on the people who don't stimulate the feeling of familiarity.) Suppose Young's suggestion is right. Still, this lack of feeling of familiarity does not make the patient a prosopagnosic. He recognizes his mother's face and the faces of others despite the lack of the feeling of familiarity. So lack of a P-conscious feeling is not at the heart of prosopagnosia. In sum, though I agree that P is the core notion, A is still a kind of consciousness.

R4. P without A; A without P

Many of the commentators agreed with at least some of my cases of P without A. **Revonsuo** proposes a new one: dreams. The trouble with dreams as cases of P without A is that dreams often involve substantial rationality. For example, Chomsky tells me he plans papers in his dreams, and there is a well-known phenomenon of lucid dreaming in which the dreamer, knowing he is dreaming, changes the course of the dream. Of course, many dreams are much less rational, on the surface at least, but I would be reluctant to suppose that these dreams are unconscious in a different sense of the term than less overtly sensible dreams. I expect that dreams are unconscious in the sense described in the discussion above of the unconscious drunk.

What about A without P. In the target article I said that such cases were conceptually possible, but I knew of no actual ones. If it is so much easier to find P without A than A without P, that is a striking empirical fact. **Humphrey** was the only commentator to make any remarks in favor of A without P. He argues that Helen was in some respects such a case, correcting wrong impressions about his unpublished work. But, as he notes, even if Helen is a case of no visual phenomenality, she had no shape recognition of any kind. So we need to know more about cases such as Helen to count her as a good case of A without P.

I have long been troubled by cases from the "imageless thought" controversy from the early part of the century (G. Humphrey 1963 – not the same **Humphrey**). For example, pick up an object from your desk, put it down, and pick up another. If they differ substantially in weight, you may "just know" this. My experience here is that I have "images" of the weights of the two objects, but apparently not of the *relation* between them. The relation between them appears to be something I just know without any phenomenal experience of it. This is a tricky bit of introspection, just the sort of thing that got psychologists in trouble during this controversy. But it would be foolish to ignore it, since it can guide experimentation. I hope some clever experimentalist figures out how to get an experimental handle on it. Burge (forthcoming) has some very interesting arguments for A without P. One of Burge's examples involves the familiar case of a solution to a problem popping into mind. We often know we've got the solution without actually expressing it in any internal phenomenal clothes such as words or pictures.

I should add that from the point of view of empirical model building, it is very important to distinguish between cases of A without P, like superblindsight, if it exists, and Burge's sort of case. Both count against Model 2 because they show that some highly sophisticated thought (that must be accomplished by the Executive System if there is one such system) is not P. But neither Burge's type of case nor the imageless thought case challenges Schacter's (1989) model, because that model allows for executive processes that are not P. However, superblindsight, if it exists, would challenge Schacter's model, because that model tells us that the only way for perceptual information to get to the Executive is to pass through the P-module. Of course, we already have good reason to reject Model 2. As pointed out in the target article, the intermediate steps in problem solving often fail to be P, and that alone counts against Model 2.

Let us now move to objections to the idea of P without A. **Church, Kobes,** and **Revonsuo** criticize my example of the unattended noise as a case of P without A. They say that people adjust the loudness of their speech in response to noise even when not attending to it, and that is a rational action that reflects A-consciousness of the noise. But this noise adjustment does not show A-consciousness in my sense of the term. There is no inferential promiscuity here. If the notion of A-consciousness were to be weakened in this direction (also suggested by **Graham** and in Flanagan's [1992] critique of my notion of A), the consequence would be to let in cases of A without P. If A-consciousness were watered down in this way, then blindsight and the other "covert knowledge" syndromes would be cases of A without P. Of course if you like A without P and hate P without A, you could adopt **Graham**'s and Flanagan's suggestion, but your pleasure would be purely verbal.

Kobes criticizes one of my arguments for conceptually possible cases of P without A. In Note 7 of the target article I worried about an A-unconscious state that caused an A-conscious state with the same content. The first state is ex hypothesis not A-conscious, but it is in virtue of one's having *that* state that its content is inferentially promiscuous, so it seems that it does have to be A-conscious. I avoided the problem by thinking of the "in virtue of" in the definition of A-consciousness (a state is A-conscious if in virtue of one's having the state, a representation of its content is inferentially promiscuous, etc.) as *directly* in virtue of. If state X has an inferentially promiscuous content, but only because it causes state Y, which inherits X's content, then X doesn't count as A-conscious. Kobes thinks this answer gets me in trouble with the perceptual states of the superblindsighter (who, you will recall, is conceptually possible but apparently nonexistent). He says that it is only in virtue of the effects of these perceptual states on the superblindsighter's thoughts that the perceptual states are inferentially promiscuous, and so on, so the perceptual states are *neither A-conscious nor P-conscious,* and the supposed example of A without P dissolves. But why suppose, as Kobes does, that the superblindsighter's perceptual states of "seeing" an X have their effects only via the causation of the *thought* that there is an X? If such a perceptual state could only have an effect by causing a specific thought, then it would not be informationally promiscuous and it would not be A-conscious. A genuinely A-conscious perceptual content would be freely available for use in thought.

Kobes criticizes my account of the Sperling (1960) experiment, saying that before the icon fades, the subject is both P- and A-conscious of them all jointly, and after the icon fades the subject is neither P- nor A-conscious of them all jointly, so there is no divergence of P and A. Let me try to state my point better. Consider the distinction between *jointly* and *severally.* A pair of swimmers can be poised to win jointly if, say, they are on the same team in a race of teams. But in a race in which only one swimmer can win, a pair of swimmers would be poised to win severally, not jointly, that is each is poised to win, even though they can't both win. In the Sperling experiment there is never a time in which the letters are all poised to win jointly (become inferentially promiscuous, etc.) because, as with the individual swimmers, they cannot all win. But they can all jointly be P-conscious, or at any rate that's my claim.

Zalla & Palma argue that the tip of the tongue phenomenon (and "Feeling of Knowing" states generally) is a case of P without A. You have the feeling of knowing someone's name, but you can't access it. But on the surface, at least, the content that the name is known is *both* P and A, and the specific name content (e.g., "Blanche") that leads to knowledge of or correct guesses about features of the name (rhymes with "ranch") is *neither* P nor A. I agree with Zalla & Palma's statement that Feeling of Knowing states involve consciousness of "the *existence* of a content but not *of* the content itself." But as far as I can see, this characterizes both P and A, so there is no gap here between P and A. Zalla & Palma argue (if I understand them rightly) that when I have the feeling that I know her name, typically the name itself is P, but not A. "Blanche" is a P-content but not an A-content. But I don't see why the facts that they mention about frontal lobe patients are supposed to support this idea. They point out that I have not got a wealth of data to support the idea of P without A. They are right, but I am hopeful for the future.

Baars thinks that P = A, but what is his evidence? In his reply he mentions a few cases in which both P and A are present and other cases in which both P and A are absent. I mentioned in the target article that this sort of evidence is suggestive of a rough correlation, but it can hardly show that P = A. He says that "implicitly . . . we all treat" P and A as "empirically inseparable." True, but implicitly we treat the earth as stationary as well. Baars studies P by studying A, so if P ≠ A, his research program would have to be reevaluated. Even if P and A are perfectly correlated within some conditions, but not identical, his research strategy would be questionable. One would want to know *why* P and A are correlated. Weight and mass are correlated at the surface of the earth, but studying weight is not studying mass. He says, "GW theory shows that the equivalence . . . is very productive indeed." I question that; we know lots about A, almost nothing about P. I think we are more likely to make progress by looking very carefully at cases where P and A seem to diverge. If they do diverge, that's where the interesting results are. Baars just ignores the cases that cause problems for his view instead of subjecting them to scrutiny. **Church, Kobes, Revonsuo,** and Chalmers (forthcoming) agree with Baars that P and A are correlated, but unlike Baars they take the responsibility to confront the putative exceptions. Baars should consider what **Humphrey** says about A without P. Baars brings in evolution to argue for P = A, saying that we are unlikely to get two nearly identical organs for one job. "That is not how the natural world works." In our state of ignorance of what P is and how P might be related to access, I don't think such an argument has much weight. One can imagine an uninformed person wondering why evolution needed both sperms and eggs, two things for one job. Should the uninformed person conclude that sperm = egg? No, he should try to find out more about the correlation. And we are no less ignorant about consciousness than this uninformed person. Furthermore, even sophisticated biologists do not agree about why sex evolved. So the question of Why two things for one job? is still a live one. Nonetheless, concluding that sperm = egg would be a joke. Baars coauthored "Does Philosophy Help or Hinder Scientific Work on Consciousness?" (Baars & McGovern 1993), arguing that philosophers should get out of the way. We should evaluate this criticism in the light of the fact that philosophers are the ones most likely to raise doubts about Baars's research program.

R5. Why not make A easier to have?

Church, Graham, and **Revonsuo** think I set the A-hurdle too high. Church suggests accessibility instead of being poised for access, and Graham wants to set the hurdle low enough so that the kind of access that blindsight patients have is good enough for A. Flanagan (1992) reacted in a similar manner to an earlier version of this paper, proposing that we substitute a notion of "informational sensitivity" for A, where blindsight patients are informationally sensitive to information in their blind fields.

Of course, one is free to define "Access-conscious" as one chooses. What I was after was a notion of access that I

find in common-sense reasoning and that is the best shot at coextension with P. Defining A in terms of informational sensitivity will frustrate that aim. As I mentioned, blindsight will count as a case of A without P. Indeed, one reason for choosing "poised for access" instead of "accessible" is to avoid classifying as A a familiar kind of inactive or dormant belief. For example, we were all taught facts in elementary school, such as that the sun is 93 million miles away from the earth. Perhaps you were taught this and have believed it ever since, even though you haven't thought of this fact in years. It was an inactive belief. But if we make A a matter of accessibility, then such inactive beliefs will be A but not P, and that makes the failure of coextension of A and P a trivial consequence of a definition. In the view of many of the commentators, A = P or at least A and P are coextensive or can be made so with a little tinkering with definitions. I disagree, but I do not want my disagreement to rest on a triviality.

Similar points apply to the definition of "P." **Humphrey** prefers to restrict P to the result of irritation of the sensory surfaces. This leaves out, for example, images and the phenomenal aspect of thinking, and would therefore generate A without P. Perhaps Humphrey would want to include images that reflect the same states as are produced by sensory surfaces, but then why leave out the phenomenal aspect of thought?

As Chalmers (forthcoming) notes, I should welcome attempts to tinker with the definitions of "P" and "A" so as to make them coincide better. I don't want my claim that P ≠ A to depend on anything that is merely verbal. So I invite further attempts to improve these definitions.

R6. Why does A have to be rational?

I defined A using the notion of rationality, and this draws complaints from **Graham, Lloyd, Revonsuo,** and **Warren** as well as an excellent account of what I should have said from **Kobes.** Though I think there are deep connections between consciousness (both P and A) and rationality, I didn't intend to imply that principles of logic or good reasoning are necessary for A or that animals cannot have A. I meant to appeal to the use of a representation in reasoning, even if the reasoning is poor. And I intended a relativization to the capacities of the type of animal involved. As Kobes says, "Access is not diminished merely in virtue of the creature's having less power to reason or act." I apologize to my readers for not being clearer about this.

R7. Is the P/A distinction useful?

What is good about the P/A distinction? (1) It is an ordinary concept of consciousness, and so it is relevant to how we think about ourselves. (2) It is the information-processing image of P and thus a good candidate for what P is in information-processing terms. And (3) the relative ease of finding cases of P without A as compared with A without P suggests the distinction is on to something to do with the joints of nature.

Dixon argues that there is no point in distinguishing P from A. He gives a number of cases that he apparently sees as borderline ones, not clearly A or P. But to conclude from the existence of borderline cases that there is no distinction or that the distinction is not useful is a mistake. There are objects that are borderline cases between a table and a chair – a bit table-like, a bit chair-like, but neither table nor chair. That doesn't impugn the utility of the table/chair distinction. Dixon mentions many cases, but I'll just discuss the one he says casts the greatest doubt on the distinction: Hypnosis induces a hallucination in the subject of the experimenter, but when the subject turns to the side he also sees the real experimenter. Dixon seems to think that there is some sort of conundrum here that casts doubt on the A/P distinction. But if there is a genuine hallucination, then when I'm having it I'm having one experience that is both A and P, and when I see the real experimenter I have a similar experience that is also both A and P. What's the problem? Dixon goes on to argue that I should not have constructed a theory of consciousness on the basis of evidence from brain damage, because these patients may have compensating defects that make them different from normal people, and there are not enough of them for good sample size. But if brain-damage cases show P without A, then its existence is proved whether or not it ever occurs in normal people, and if brain damage does not yield cases of A without P, this is an especially interesting fact given the fantastic wealth of variation in brain-damage cases. These points illustrate why general cautions like, "You can't show anything by appealing to brain damage" are so weak. Every source of evidence has its pitfalls – the critic of a particular bit of empirical reasoning must show that the pitfalls have been engaged.

Warren rejects the A/P distinction because it is not defined in a completely clear and unambiguous way. But the demand for such definitions is misplaced. Especially at the beginning of a scientific enterprise there is no alternative to going by the seat of one's pants. I once saw a book that discussed the quality of scientific articles. The authors shared Warren's mistaken view of definition. They felt it was important to define "scientific quality," and they did so in terms of the number of references to the article in the subsequent literature. As anyone can see, that is no good – for example, an article can be referred to as a standard example of a terrible mistake. At an early stage in inquiry, noncircular definition is usually not possible. It took a whole thermodynamic theory to ground the thermodynamic definition of temperature, and further work reducing this theory to statistical mechanics to ground the definition of temperature as mean molecular kinetic energy. Definition and theory must progress together. The demand for definition at an early stage encourages misplaced precision.

R8. Is there a fallacy at all?

Atkinson & Davies quote Shiffrin and Schneider (1977) giving a theory of P in terms of A, and they say reasonably that there is no conflation here. But the fact that Shiffrin and Schneider don't exhibit a conflation does not show that others don't either. The sign of lack of conflation in what they quote is that in a single sentence the authors say they are going to give an information-processing theory of the "phenomenological feeling of consciousness." But there is another route to a theory of P in terms of A: first you conflate P and A, and then you give a theory of A, taking it to be a theory of P. The cases I quoted look quite

different from Shiffrin and Schneider, more in the direction of the second story. The important point is that the difference here is not in premises and conclusion. I agree that in that regard Shiffrin and Schneider are more or less the same as a number of the cases I mention. The difference lies not in the premises and the conclusion but in the means of getting from one to the other.

Atkinson & Davies go on to suggest a new argument for explaining A in terms of P. P is relatively intrinsic and categorical compared to A, whereas A is relatively relational and dispositional. They are right about this, but the upshot for matters causal is limited. Atkinson & Davies think the relation between P and A is like that between the chemical basis of solubility and the tendency to dissolve. However, a token thought can be accessible at one time but not another, depending on the whole system and the pathways available. We do not know that P content is a force toward mechanisms of reasoning and reporting. This is of course intuitively plausible, but then blindsight is or was intuitively *im*plausible. Suppose, for example, that Schacter's (1989) model is correct. Then we may be able to explain why P-conscious representations tend to be A-conscious without any appeal to the intrinsic properties of P. It is a property of the model that anything that gets to the P module is close to the Executive System and (perhaps) likely to be sent there.

Tye also argues that there is no fallacy, but on a different ground. P is preconceptual, so how could it involve the Executive System? So it must be that information fails to arrive at the Executive System because it fails to be P; so there is no fallacy. On the substance of Tye's argument: How do we know if P is preconceptual? I used the phrase "representational" to describe P-content instead of "intentional" to allow for that possibility, but I have seen no convincing argument to the effect that P-content is preconceptual. Furthermore, there is reason to doubt the preconceptual claim. The specialized modules appear to have lots of conceptualized information. For example, there appears to be information in the face module about people's *occupations* (see Sergent & Poncet 1990; Young 1994a; 1994b). On Schacter's (1989) model, all the inputs to the P-module are from sources that contain conceptualized contents. But suppose that Tye is right. Still, this is a new argument. When someone finds a good argument from premises to a conclusion, there is a temptation to suppose that this is what others have had in mind who have argued, apparently fallaciously, from the same premises to the same conclusion. However, I saw no sign of Tye's argument in the works that I criticized.

R9. Is P at all representational?

Katz argues that I have not presented sufficient reason to conclude that P-content is at all representational. He notes that even though what it is like to hear a sound from the right ≠ what it is like to hear a sound from the left, one cannot conclude that P-content is representational. What it is like to be married ≠ what is it like to be single; marital status is social, but it would be a mistake to conclude that P-content is social. The argument form is certainly not valid, but it has something to it: the premises call for an account of the difference. In the case of marriage, we have an adequate account of why what it is like to be married ≠ what is it like to be single without assuming that phenomenal content is social. And in the direction case, as Katz says, we could explain the different P-contents on the basis of a difference in attention or orienting. But I believe that there are many cases for which the best explanation of the difference between the P-content of seeing X ≠ the P content of seeing Y appeals to representational features of P.

Consider the P content of seeing a square compared to the P-content of seeing a circle. These P-contents allow one to see that the squares are packable together without gaps, whereas the circles are not. Also, the squares have a small number of axes of symmetry, but the circles have a large number. These examples show that P-content is representational, but they also show something stronger and more interesting, something that must be **Katz**'s real target. Katz's position allows that P-content represents as ink represents, namely, extrinsically, that is, it can be used to represent. But what the examples show is that P-contents represent per se. The P-contents are intrinsically packable (for the square-representing contents) or not packable (for the circle-representing contents). The P-contents alone allow one to see such facts.

Katz notes that my examples are spatial, and suggests that to the extent that I am right, it may be because P-consciousness involves "clicking" on a region of a spatial buffer. But nonspatial properties, for example causality, are represented by P-contents. Roll a ball at another so that the first makes the second move. I don't think that very subjective type could be experienced as the second ball acting on the first (see Michotte 1946). Katz points out that for P properties that are subject to spectrum inversion or an analog of it, the P-contents can represent the properties involved in inversion only extrinsically. True, but the possibility of spectrum inversion applies notably to "secondary" qualities like colors and not to P-contents, of, for example, shapes or causal properties. Katz also objects that there is some tension between P-content being representational and there being a P-module. But the representational features of P-contents could depend on processes that occur prior to the P-module (say in the specialized modules) or after it. The idea would be that non-P representations sent to the P-module become representational P-contents within it. Like **Farah,** Katz sees the P-module as concerned only with intrinsic properties of the representations in it. Katz does not comment on whether, for example, thoughts are P-states, but his views fit best with **Humphrey**'s restriction of P to sensory properties.

R10. Is there an important distinction left out?

Harman and **Lycan** have similar criticisms. First, both think that I have left out a distinction. Lycan distinguishes between a quale, for example, a red area of the visual field, on the one hand, and self-monitoring of that quale on the other. The self-monitoring apparently consists in mobilizing internal attention toward the quale or alternatively, in the views of many students of this issue, having a higher order thought about the quale. Lycan says that my term "P" comprehends both of these, and he seems to suggest that "P," (as with "what it is like") is ambiguous between the two. I find it hard to take the criticism that I left out any P/monitoring distinction, since I explicitly mentioned three forms of internal monitoring-

consciousness and I explicitly distinguished them from P (sect. 4.2.2, para. 1). Lycan also disagrees with me about whether qualia are entirely representational, that is, whether there is more to P-content than representational content. I say yes, Lycan says no. But Lycan promotes this entirely legitimate disagreement into another sense of P-consciousness. He calls my qualia, the ones that they aren't entirely exhausted by their representational properties, "Q-ualia." I don't see why a disagreement about P-content should be blown up into a new sense of P.

Harman says I miss the distinction between "raw feel" and "what is it like." Raw feel is Harman's word for **Lycan**'s Q-ualia, the P-contents that I accept, and he rejects that they are supposed to outrun their representational content. Harman's what it is like is Lycan's monitoring consciousness. So raw feels are P-contents that are at least in part nonrepresentational and can exist without monitoring, and what it is like, which Harman feels is the proper referent of "consciousness," is entirely representational and has a constitutive connection to the self. As with Lycan, I find it hard to take seriously the criticism that I have conflated these things. I was very explicit about all the "pieces." The issue between me and Harman is one of what the most revealing way of assembling these pieces is.

What separates **Harman** and **Lycan** from me is mainly two issues. First, I say the phenomenal content of an experience goes beyond its representational content. They disagree (more on this later). A second source of disagreement has to do with the relation between consciousness and the self and monitoring. My P-content is a kind of phenomenal content that need not be monitored, and I give little emphasis to the connection with the self. (I describe P-content at a few points as having a "me-ish" phenomenal quality.) So my major category does not emphasize monitoring or connection with the self, and in fact I mention monitoring and self-consciousness as separate categories. By contrast, Lycan emphasizes monitoring. For example, he says that there is an explanatory gap for monitoring consciousness, but not (or not obviously) for the phenomenal content that is itself monitored. And Harman emphasizes that A-conscious experience is always an experience of a self.

To sum up, (1) I have a substantive disagreement with both **Lycan** and **Harman** about whether there is any phenomenal but not entirely representational content. And (2) there is a substantive disagreement with Lycan about the explanatory gap. But (3) there is also a much more diffuse issue between me and them about what is important in the study of phenomenal consciousness. Lycan emphasizes monitoring, Harman emphasizes the self (at least by contrast with me), and I emphasize the phenomenal quality of experience. Because there are some differences between Lycan and Harman, let me discuss them separately.

Lycan in effect criticizes (see especially his Note 4) my claim in the target article that the "explanatory gap" applies to P-consciousness. He says there is an explanatory gap for monitoring consciousness (P attended), but not, or not obviously, to P itself. I would like to see Lycan back this up. Attention is as likely to yield to the information-processing theories of cognitive psychology and cognitive neuroscience as is, say, memory or any other cognitive process. It is an active area of research with many competing theories – see, for example, the seven articles in *Attention and Performance XV* (Umiltà & Moscovitch 1994), or the seven articles in *Attention and Performance XIV* (Meyer & Kornblum 1993). By contrast, there are really no theories (nothing that deserves to be called a theory) of P. No one really has any idea about what P is. As mentioned earlier, the typical research program is to study A, hoping A = P (see **Baars**). Monitoring consciousness is attended P-consciousness, so what is likely to be understood within the confines of current research paradigms is just the part that Lycan thinks adds the mystery.

Harman says that A-conscious experience is always an experience of a self and necessarily involves access to that self, so, trivially, consciousness is "access consciousness." Is access to the self supposed to involve engagement with mechanisms of reasoning and reporting bringing with them inferential promiscuity, and so on. If so, then Harman owes us some comment on the putative cases of P without A. If not, then I don't think there is a large disagreement here, for Harman's view does not then preclude P without A. (**Levine** makes essentially this point.) But there is at least a difference in emphasis. I am a Humean about the self (like **Dennett** and **Church**), seeing the self-regarding aspect of P-consciousness as being a matter of connection of the P-state to other states. I said in the target article that P-content often represents the state as a state of mine. Part of the self-regarding aspect of P in my view is further P-attribute that involves some apprehension of the connection to other states. But I am also willing to countenance P-states in my body that are not fully mine. (I mentioned hypnotic analgesia as a possible example.)

There is one issue that I have not yet mentioned on which **Lycan** agrees with me rather than **Harman.** Lycan allows a category of qualia (e.g., a red area of the visual field) that are phenomenal but not necessarily monitored. I would guess that these fit into the category of what Harman calls "sense data," which he takes me (wrongly) as endorsing. I am grateful to Lycan for explicitly not supposing (as he did in Lycan, 1987, and as Harman does here) that the advocate of qualia is committed to sense data or "phenomenal individuals." If any of us is committed to sense data, it is **Lycan, Armstrong, Church, Kitcher** (and perhaps **Harman**) and other advocates of monitoring. The rest of us can agree with Harman (1990) that we look *through* our experiences, and that the experiences do not need to be *observed* in order to be phenomenally conscious.

Lycan and **Harman** think that P-content is entirely representational. They note that I think P-content outruns representational content, and they both appear to conclude that I am therefore committed to some new strange kind of phenomenal content that is entirely nonrepresentational, Lycan's Q-ualia and Harman's raw feels. I did say that the P-content of orgasm represented nothing at all, but this is not a strongly held view. I am happy to say that very little of the phenomenal content of orgasm is representational. Certainly very little of what matters about orgasm is representational. What puzzles me about Lycan and Harman is that they appear to think that the idea that there is more to phenomenal content than what it represents entails some "weird" or "exotic" realm of sense data that are entirely nonrepresentational and of

which one is "directly aware" in perception. As reflection on the example of the phenomenal content of orgasm should make clear, the idea that there is more to phenomenal experience than its representational content is just common sense from which it should take argument to dislodge us. Furthermore, why should believing in phenomenal contents that are *partly* nonrepresentational commit one to *wholly* nonrepresentational phenomenal contents (of the sort **Katz** advocates)? Perhaps Harman and Lycan think that if a P-content is partly nonrepresentational, one can simply separate off the nonrepresentational part and think of it as a separate realm. But once the argument is made explicit it looks dubious. Consider the examples I used in my reply to Katz, say, the example of packability in the case of experiences as of squares contrasted with circles. Is it obvious that there is any separable phenomenal content of that experience that is phenomenal but not representational? I don't think so.

R11. More on monitoring

Kitcher objects to my contrast between P-consciousness, which applies primarily to states, and monitoring or reflective consciousness, which applies primarily to persons. A pain is monitoring conscious if (roughly speaking) the person has another state that is about the pain. She notes that monitoring consciousness is a matter of some states being about others, and wonders why I make this distinction. The answer is that if a state of mine is about a pain of yours, your pain is not thereby monitoring conscious. So the notion of a person is crucial. (Someone could argue, as Kitcher does not, that the same is true of A-consciousness.)

Kitcher also says that she cannot see what "what it is like" could evoke if not monitoring consciousness and that the explanatory gap applies most obviously to monitored states. She also finds it implausible that there could even be phenomenal consciousness without monitoring. These points should sound familiar, since I just discussed versions of them in the comment by **Lycan,** and to a slightly lesser extent in the comment by Harman. Church also favors the view. See also Rosenthal (1986) and Burge (forthcoming). I find this difference of opinion far more troubling than any other that comes up about consciousness. I really don't know how to explain the vast divergence we see here. The magnitude of the gulf is apparent from the fact that two of the commentators, **Armstrong** and **Natsoulas,** assumed that *I* mean monitoring consciousness to be involved in A or A and P together. Armstrong complains about the term. "A" would be better, he says, if it stood for action; and even better: change it in for "I" for introspection. My A-consciousness, however, requires no introspection. Natsoulas says – and he says that I agree – that if we have an A-conscious P-state, then we must have another representation of that state. He calls this representation of the phenomenal state "the required representation," since it is supposed to be necessary for A-consciousness. I am not sure that I follow the rest of the argument, but he seems to go on to argue that the required representation itself has to be the object of yet another state.[2]

What can be said in favor of the idea that monitoring is necessary for phenomenal states, or at least for "sensory experience" (**Lycan**). **Kitcher** mentions that listening to a piece of music requires integration over time. But what reason is there to think that sensory integration requires states that are about other states? It requires memory, of course, but memory images can be linked in the appropriate way without any "aboutness." Lycan appeals to the familiar long-distance truck driver who drives competently but in a daze. He stops at red lights and so must have had a real quale, but for experience, says Lycan, he has to notice the quale, that is be aware of it. Nissan is funding some work at MIT that apparently includes an investigation of this phenomenon, and I have been told some simple preliminary results. If you probe "unconscious" drivers, what you find is that they can always recall (accurately) the road, decisions, perception, and so on, for the prior 30–45 seconds, but farther back than that it's all a blank. No one should be surprised by this result. What else would one expect? If you were a subject who was just asked about the last 30 seconds, do you think you would say that you had not experienced the last 30 seconds? If you say yes, you are in the grip of a theory. This seems a clear case of experience as genuine as any but quickly forgotten, a moving window of memory. The driver is paying some attention – to the road. Otherwise the car would crash. He is not paying attention to his own states, but one rarely is. Of course, more attention to the road or to the experiences themselves would yield different experiences. But the inattentive driver is still experiencing the bends in the road, the red lights, the other cars maneuvering around him. Why should anyone suppose that there is nothing it is like to be that driver or that to the extent that there is an explanatory gap it doesn't apply here?

One way to see what is wrong with the idea that monitoring consciousness is crucial for P-consciousness is to note that even if I were to come to know about states of my liver noninferentially and nonobservationally (as some people know what time it is), that wouldn't make those states P-conscious. Furthermore, even if I were to come to know of states of my mind that way – say, the operation of my language-understanding mechanisms, or Freudian unconscious states – that wouldn't make those states P-conscious. Of course, all this observation shows is that monitoring isn't sufficient for P, but if monitoring is necessary for P, what else is required to get a sufficient condition? Advocates of this view have not provided an answer to this question.

A second point is that monitoring seems too intellectual a requirement for phenomenal consciousness. Dogs and babies may have phenomenal pains without anything like thoughts to the effect that they have them. If we have two dogs, one of which has a pain whereas the other has a similar pain plus a thought about it, surely the latter dog has an A-conscious state even if the former doesn't! Yes, but it is the converse that is problematic. The first dog could be conscious without being conscious of anything.

Kitcher anticipates the dog objection and replies that I make monitoring a sophisticated activity requiring a sense of self. Not so. What I doubt is that a dog that has a phenomenal state need have any further state that is about the first one. I don't require a sense of self.

As observed in the target article, advocates of the higher-order thought perspective (e.g., Rosenthal) note that if I infer my anger from my behavior, that does not make my anger conscious. They therefore include a

requirement that the higher-order thought be arrived at noninferentially and nonobservationally. But as Byrne (forthcoming) notes, why should these details of the causation of the monitoring state matter to whether the state that is monitored is *conscious?* Byrne mentions a number of other conundra for the advocates of monitoring having to do with the level of detail of the monitoring state and the question of whether the description included in the monitoring state could be false of the state monitored.

Levine makes some remarks that may help to explain this puzzling difference of opinion with advocates of monitoring. He notes that phenomenal character itself is a "kind of presentation," a presentation to the self. He also says that this brings with it a kind of access that is distinct from A, phenomenal access as distinct from information-processing access. And he suggests that the existence of two kinds of access is partly responsible for the difficulty in distinguishing A from P. There is at least something right about this. It is often said that phenomenology is self-revealing, that there is something intrinsically epistemic about phenomenology. Perhaps phenomenal access is itself a phenomenal quality, a quality that has some representational features. These representational features represent the state as a state of me. But it does not follow that any kind of information-processing access (such as A) or monitoring is necessary for P.

R12. Does P outrun its representational content?

Armstrong, Harman, Lycan, and **Tye** all take the view that P-content is entirely representational. I like Tye's approach best because he doesn't treat it as obvious that representationalism is right, but rather sees a responsibility to say what the representational contents actually are. In the case of orgasm, he specifies that the representational content is in part that something that is intense, throbbing, changing in intensity, and very pleasing is happening down there. OK, I will concede one thing – that there is *some* representational content to orgasm. But this representational content is one that I could have toward another person. Suppose I have perceptual contents about my partner's orgasm without having one myself. The location of "down there" might differ slightly from my own orgasm, but why should that matter? Of course, the subject the orgasm is ascribed to is itself a representational matter. But is that the difference between my having one and perceiving yours – that I ascribe it to me instead of you? What if I mistakenly ascribe yours to me? Furthermore, the phenomenal quality of orgasm varies from time to time. Similarly, there are very different phenomenal experiences that fit descriptions like "in the toe," "intense," "burning," and the like.

I had a pain yesterday that is quite different phenomenally from the one I am having now, but not in any way describable in words. Of course, we should not demand that a representationalist be able to capture his contents in words, but we should be told something about the representational difference. Suppose the content is specified in terms of recognitional capacities. That runs into the problem that recognitional capacities can work without P-content, as in blindsight. At this point of the dialectic, the representationalist often appeals to functional role to specify the representational contents. So is the debate about whether phenomenal content is entirely representational just the old debate about functionalism and qualia? Representationalists certainly give the impression that their position is stronger than mere functionalism, that they can accommodate the idea that there are phenomenal contents, but that those contents are representational.

The way in which representationalism is stronger than mere functionalism comes out in **Tye**'s criticism of my example of two kinds of experiences as of something overhead. Tye doesn't just say: sure, the representational difference resides in the functional difference (though that might be the upshot of the last two sentences of his commentary). Instead, he tries to say what the representational differences are. He argues that the difference will reside in other visual and auditory features. I believe that Tye is wrong about vision but right about audition. In peripheral vision, something can be seen only as having a certain location, without any color, shape, or size. (Try waving your hand near your ear while looking straight ahead.) But without a comparable point in audition, my example will not work, and I know of no auditory analog of peripheral vision. However, my side has another arrow, for the loudness of the sound is irrelevant to its representing something as of overhead. The as-of-overhead-ness of the visual perception seems independent of color, shape, and so on, and likewise for the auditory perception. The difference seems to reside in the phenomenal character of vision as opposed to audition, and that has not been shown to be a representational difference.

R13. What is the relation between A and P?

Shepard, as usual, asks hard questions. How do we know if P peters out as we go down the phylogenetic scale as A peters out? It is a measure of our ignorance about P-consciousness that we have no idea how to go about answering such a question. I think all we can do is investigate P in the creatures we know best and hope that the answer we get throws some light on creatures who are very different from us. Shepard says that what agents do is evidence of A, not of P. I disagree. Sure, purposive action is evidence of A, but it is also evidence, albeit indirect evidence, of P. For example, let us accept for the moment Crick's (1994) current theory of P: that P is a matter of neuronal activity in reverberating cortico-thalamic circuits that run between cortical layer five and the thalamus. Such a theory can only be arrived at on the basis of behavior that indicates A. But once we have the theory (and especially when we understand why that neuronal activity underlies P) we can use it to isolate cases of P without A, or cases, if they exist, of A without P. Of course, we have to explain the discrepancy. Thus, if we find the neuronal activity but no A and hence no outward indication of consciousness, we have two choices: conclude that Crick's theory is wrong, or find some reason why in this particular case there is no A.

This line of thought also supplies my answer to **Rey**'s charge that if P is not identical to anything functional, intentional or cognitive, "what possible reason could we have to posit it in anyone's case, even our own?" I think it is always a mistake to suppose that no one could ever find evidence of something (with a few exceptions – e.g., the thing is literally defined in terms of there being no possible evidence for it). This is just an argument from

lack of imagination. A neat example is provided by the familiar idea that the world was created five minutes ago complete with all the evidence of an earlier age. It is tempting to argue that no one could find any evidence for or against such a theory, but that would be a mistake. Steady state cosmology plus the second law of thermodynamics (entropy increases in a closed system) dictate that the relatively ordered state we see around us is a result of a random fluctuation from a steady disordered state. The great fluctuation that created our order happened in the past, but when? Answer: the most likely moment for the fluctuation is the least ordered moment, and that is the most recent moment, that is, *now*. So the evidence *against* steady state theory is evidence *for* the existence of a real past.

Furthermore, in thinking about this sort of possibility, we should not ignore the utility of ordinary considerations of scientific simplicity and ad hocness. For example, one can maintain any theory – even that the earth is flat – if one is willing to adopt all sorts of ad hoc auxiliary hypotheses to explain away recalcitrant observations. In so doing, one could arrive at a totally wacko theory that is observationally equivalent to contemporary physics. But the wacko theory can be ruled out just because it is ad hoc. A further point about the "epiphenomenal" possibility is that the epiphenomenalism of Figure 3 (target article) is not the "philosopher's epiphenomenalism" in which the epiphenomenal entity has no effects at all. Rather, it is the psychologists' epiphenomenalism that rules out effects only *in a system*. The latter allows for effects, but outside the system. The color of the wires in a computer are epiphenomenal in the psychologist's sense but not in the philosopher's sense, since there are effects on observers. Thus the P-module of Figure 3 could be detectable by physiologists even if it had no psychological function.

I agree with what **Morton** says about the interdependence of A and P, and I gave a number of similar examples myself. (There is a foreground/background example in sect. 4, para. 3 and three more examples in sect. 4.2, para. 6.) I also agree with the idea that we would not have the concepts we have if not for these facts. But I do not agree that the intuitive idea of there being only one consciousness shows that the concept of consciousness is a cluster concept rather than a mongrel. The distinction, as I intended it, was linked to the concept of a conflation. If conflation is possible, then mongrel; if not, cluster. If the myth of uniqueness is enough to make a cluster, then Aristotle's conception of velocity is a cluster concept. Of course, there is no right or wrong here, only utility. If we adopt Morton's terminology, we shall have to make a distinction within the cluster concepts between those that allow conflation and those that do not.

Farah argues that if superblindsight existed, that would be evidence for Schacter's model, complete with P-module, and the nonexistence of superblindsight is evidence against such a P-module. In other words, she thinks that if the presence or absence of such a module made no difference to perception (but only to whether the subject says he is having experiences) that would be evidence for such a module. This seems to me to be precisely backwards. If a module has some information-processing function – and why else would it deserve a box – then whether it is present or absent should make a difference. It seems to be an essential feature of a P-module on Farah's idea of it, that it doesn't do much of anything except paint representations with P-paint and promote reports of experience. Sure, if it has little in the way of an information-processing function then its presence or absence shouldn't make much of a difference. But why assume that if there is a P-module it doesn't have much of an information-processing function? For example, perhaps the Executive System can do things with P representations that it can't do with non-P representations.

Farah objects to my suggestion of P-consciousness as the implementation of the function specified by the Phenomenal Consciousness box in Schacter's model. As I mentioned in the target article, the function specified by that box (and there may be others not specified by the box) is that of talking to the specialized modules, integrating information from them, and talking to the Executive System about that information. I suggested that perhaps P-consciousness is part of the implementation of that function. I used an analogy in which this function could be implemented in a number of ways, some involving consciousness, others not involving consciousness. Farah interprets the label on the box as specifying the sole function represented. I tried to cancel that reading in the text by mentioning that the function was to be understood partly in terms of the box, arrow, their relations, and the textual remarks on how these are to be interpreted. Since the label is "phenomenal consciousness," she assumes that that is the one and only intended function. So we were at cross purposes.

Young suggests that P is responsible for confidence. After all, people who "just know" what time it is don't have the confidence of people who are looking at a clock that they know to be reliable. This is certainly sensible and compelling. But blindsight raises a doubt about such commonsensical ideas: maybe we could know without P? And if we could know without P, why not confidence without P?

Navon suggests that the function of P may be found primarily in motivation rather than cognition (I made the same suggestion in Block 1991). But there is an evolutionary puzzle that this idea raises, one that derives from William Paley (1964) (via a column by Stephen Jay Gould). Paley pointed out that there is no mystery about why birds copulate – pleasure is the answer. But we can't give the same answer to the question of why the bird sits on the egg. (Paley backs this up with a description of the misery of sitting on the egg.) But why does evolution deploy two such different motivators?

Bachmann notes that I say that P depends on what goes on inside the P-module, and he goes on to indicate that this is incompatible with interaction effects involving representational contents (see the replies to **Katz** and **Farah**). But these are not incompatible ideas, and I was careful in the target article to describe a number of respects in which P-consciousness is (in the words of **Armstrong** describing my views) "thoroughly interpenetrated" by representational matters. Note that in Schacter's model, the P-module talks to the Executive System and the specialized modules, so interactions are allowed for. Bachmann mentions the possibility that a P-module might have its activity lowered, but he somehow takes me to be denying this possibility and doubting the possibility

of measurement of P. Bachmann mentions a number of fascinating phenomena that may cast some light on the relation between A and P, but I have not investigated these phenomenon sufficiently to comment on them.

R14. Is consciousness a cultural construction?

Dennett says that my critique of his view that consciousness is a cultural construction simply begs the question. I assume the A/P distinction, but he rejects it, he says. "Because I not only decline to draw any such distinction but argue at length against any such distinction, Block's critique is simply question-begging." This is a strange response from Dennett, since he does not actually reject the A/P distinction but rather reconstructs it in terms of information and access. Perhaps he thinks that the reconstructed A/P distinction is so different from what I meant that it is tantamount to rejecting the distinction. Well, then, let's suppose Dennett is completely right. To the extent that there is an A/P distinction, it is a matter of degree of access and information. Dennett's theory of access, you will recall, is that it is a matter of brain representations persevering so as to affect memory, control behavior, and so on. So the P/A distinction is a matter of brain representations' degree of informational content and degree of persevering. Then Dennett ought to be able to tell us to what degree or range of degrees of persevering and informational content his theory applies to. I'm not being very demanding. I don't insist on precision, just some idea of what degrees of information and control make for cultural construction. Perhaps he will say it is the highly informational and accessible contents he is talking about, the rich displays of colors and shapes that appear in his examples (e.g., the Times Roman X on a blue-green background). But we have good reason to think that these types of contents are not very influenced by culture. Long ago, Eleanor Rosch (1973) showed that the Dani, a tribe with only two color words, represented colors much as we do. In sum, my point against Dennett does not depend at all on whether the A/P distinction is a matter of degree or of kind. If it is a matter of degree, he must tell us what band of degrees he is talking about.

Dennett used to be an eliminativist (in "On the Absence of Phenomenology" [1979], for example). In recent years, especially since Dennett (1991), he has shifted gears, saying he is a realist about consciousness and at the same time saying that his position is not all that different from what it used to be. He appeals to the truth that the difference between eliminativism and reductionist realism is often purely tactical. However, not all reductionisms are close to eliminativism. Indeed, Dennett's new position is very different from his old one, as many readers have recognized (see **Rey,** e.g.). In giving what he insists is a theory of consciousness, with such highly substantive claims as that consciousness is a cultural construction, Dennett has left eliminativism far behind. Now he is a real realist, a reductionist or a deflationist, and the theory is supposed to be true of some deflated version of consciousness or something consciousness is reduced to. The trouble is that he has neglected to make up his mind about which deflated version he wants or what it is that he is reducing consciousness to.

My advice to **Dennett** is to read **Church** – that's the view of A and P that best captures his intentions. Church says that my analogy with the development of the concepts of heat and temperature is miscast. I said that we have an intuitive preanalytic concept of consciousness that can be resolved into P, A, monitoring consciousness, and self-consciousness. She argues that P should be seen as the preanalytic concept, and given its confused nature, we should abandon it in favor of ideas such as A, monitoring, and self-consciousness. She gives an interesting argument for the confused nature of P. A P-state must be a state of a self, and given that there is no Cartesian self, being a state of a self must involve relations to other states. Then comes the step that mainly bothers me: according to Church, P (if it exists) is intrinsic. Since P is both intrinsic and involves a relation, P is a confusion. My view is that this step conflates concepts with the properties that they are concepts of. The concept of a color does not involve relations, but color (the property) is highly relational. The concept of water has nothing to do with molecules, but water (or the property of being water) is constituted by being a molecular amalgam of hydrogen and oxygen. Similarly, the concept of P (of a state) has nothing to do with other states, but P itself could turn out to be relational. This point is briefly mentioned in Note 10 of the target article.

Oddly enough, **Church** is well aware of the concept/property distinction, and pins the incoherence on the concept. Yet in laying out her argument, she shifts to properties, saying that the property of being phenomenal is both intrinsic and relational. I also have some disquiet about the prior step in her argument. I agree that a P state must be a state of the self, and I agree about the deflationary view of selves. But I am not convinced that the way in which P involves the self is incompatible with intrinsicness. At a minimum, the mode of self-involvement could be simple, a phenomenal property, the "me-ishness" I described (see **Levine** and my reply to his comment). Alternatively, the state could in some sense be about other states or about the self (it could represent the state as a state of me, as I said in the target article) but not in a way that would satisfy a functionalist. I can want a sloop even if there aren't any sloops. And the relation to other states or to the self could be like that.

Van Brakel takes me to be an advocate of "one true taxonomy," but I took pains to avoid this characterization. I emphasized repeatedly that there are many notions of access-consciousness with utility for different purposes. My purpose had mainly to do with a notion of access as a surrogate for phenomenal consciousness. Furthermore, there are somewhat different notions of phenomenal consciousness that are legitimate for some purposes, for example, the limitation to bodily sensations suggested by **Humphrey** (see also **Katz**). I am perfectly happy to allow that culture affects P-consciousness. I emphasized that intentional and phenomenal content interpenetrate, and I don't think anyone should doubt that culture can affect intentional content. But note the difference between the idea that culture affects phenomenal consciousness and the idea that culture creates it. Culture affects feet – the feet of Himalayan tribesmen who walk barefoot in the mountains are different from the bound feet of nineteenth-century Chinese women. But culture does not *create* feet.

I have to admit skepticism about much of **van Brakel's** evidence, however. Whorfians thought culture affected color and form perception until Berlin and Kay (1969) and Rosch (1973) showed the effects were overrated. Van Brakel's evidence is best evaluated when we know enough about consciousness to see whether it really differs in different cultures.

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NOTES

1. Opponents of the inverted-spectrum thought experiment should pay attention to cases like the legal blindness/eyes-closed case. It is much easier to come up with an inverted-spectrum type of thought experiment for a sensory modality with reduced informational content. **Tye,** for example, has objected to the inverted spectrum hypothesis on the basis of asymmetries in color – blue can be blackish but yellow cannot. But such objects do not apply to vision in the legal blindness/eyes-closed mode.

2. I can surmise that what misled **Natsoulas** was a remark in Note 11. It would take me too far afield to raise the issue here.

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Letters "a" and "r" appearing before authors' initials refer to target article and response, respectively.

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