
THE JOURNAL OF PHILOSOPHY

VOLUME CVIII, NO. 1, JANUARY 2011

WHAT IS THE ROLE OF CONSCIOUSNESS IN
DEMONSTRATIVE THOUGHT?*

Perception plays a fundamental role in enabling us to think about objects and properties in the world around us. In particular, perception of objects and properties enables us to think *demonstrative* thoughts about them.¹ But what must perception be like in order to play this role? Normal human perception is conscious in the sense that there is something it is like for us to perceive. This raises a question about the role of consciousness, which is the target question of this paper. Must perception be conscious if it is to enable us to think demonstrative thoughts about the world around us? And if so, why?

We can make the target question more vivid by considering examples of unconscious perception, such as blindsight.² Patients with blindsight are able to respond to stimuli that they do not consciously perceive. For example, when presented with a stimulus in the blind field and asked to guess whether it is an “X” or an “O,” they answer correctly with a high degree of reliability. What explains this reliable ability is the patient’s unconscious perception of the stimulus. So we can ask: is it

* Early versions of this paper were presented to the Basic Knowledge Workshop at the Australian National University in May 2007, the Annual Conference of the Australasian Association of Philosophy in July 2007, and the Workshop on Attention: Fundamental Questions at University College Dublin in May 2008. I am grateful to many people for helpful comments, including John Campbell, David Chalmers, Imogen Dickie, Chris Mole, James Pryor, Johannes Roessler, Susanna Siegel, Daniel Stoljar, Nico Silins, Wayne Wu, and an anonymous referee. Some of these ideas descend from my Ph.D. dissertation at New York University, so I also record earlier debts to Ned Block, Paul Boghossian, Bill Brewer, Christopher Peacocke, Jim Pryor, and Crispin Wright.

¹ Not all demonstrative thought is based on perception. For example, we can think demonstrative thoughts on the basis of memory and testimony, as well as perception. However, this paper is concerned only with demonstrative thought that is perceptually based, although this restriction is left implicit in the main text.

² For an overview of the empirical literature, see Lawrence Weiskrantz, *Consciousness Lost and Found: A Neuropsychological Exploration* (New York: Oxford, 1997).

possible for a blindsighted patient to think demonstrative thoughts on the basis of unconscious perception? If so, then perception need not be conscious in order to provide a basis for demonstrative thought.

As a matter of empirical fact, it seems that blindsighted subjects are not able to think demonstrative thoughts on the basis of unconscious perception alone. For example, when presented with a stimulus in the blind field and asked what it is, they cannot answer. They respond to stimuli in the blind field only when they are forced to choose from a range of options. Even then, they claim to be only guessing and express surprise when informed of their reliability.³ This suggests that the information provided by unconscious perception is not spontaneously accessible for use in thought, but only under the forced-choice conditions imposed by the experimenter. If this is right, then the subject must rely on more than unconscious perception in order to think about stimuli in the blind field. For instance, he may use the experimenter's prompting to infer that there are stimuli in his blind field on which he is being asked to report. In that case, he will be thinking about them by *description*, as the stimuli about which he is being asked.

However, these empirical observations do not settle the question at issue. I do not mean to be raising a purely empirical question about the role of conscious perception in demonstrative thought, but rather a distinctively philosophical question about whether there is a role for conscious perception that cannot be played by anything else. In other words, the question is not whether it is possible *in practice*, but whether it is possible *in principle* for blindsighted subjects to think demonstrative thoughts on the basis of unconscious perception. Therefore, we can abstract away from many of the contingent empirical facts about blindsight. In the spirit of Ned Block's "super-blindsighter," we might consider a counterfactual blindsighter whose unconscious perceptions are accessible for spontaneous use in the control of action, reasoning, and verbal report.⁴ If the super-blindsighter is able to think demonstrative thoughts on the basis of unconscious perception, then we may conclude that perception need not be conscious in order to provide a basis for demonstrative thought.

The example of super-blindsight brings out another key point, which is that the relevant notion of consciousness is what Block calls *phenomenal consciousness*, according to which a state is conscious just

³ "When he was shown his results he [patient DB] expressed great surprise and insisted several times that he thought he was just 'guessing.'" See Weiskrantz, E. K. Warrington, M. D. Sanders, and J. Marshall, "Visual Capacity in the Hemianopic Field following a Restricted Occipital Ablation," *Brain*, xcvi (1974): 709–28, at p. 721.

⁴ Ned Block, "On a Confusion about a Function of Consciousness," *Behavioral and Brain Sciences*, xviii, 2 (June 1995): 227–87.

in case there is something it is like for the subject to be in that state. This may be contrasted with Block's functionally defined notion of *access consciousness*, according to which a state is conscious just in case it is accessible for spontaneous use in the control of action, reasoning, and verbal report. The original point of Block's super-blindsight example was to illustrate the conceptual possibility of perception that is access conscious but not phenomenally conscious. The question that is prompted by the super-blindsight example is whether perception must be conscious in the phenomenal sense if it is to provide a basis for demonstrative thought.

My main aim in this paper is to argue for a positive answer to this question. First, though, I want to prepare the ground for my own account of the role of conscious perception in demonstrative thought by considering the alternative accounts proposed by Gareth Evans in *The Varieties of Reference* and John Campbell in *Reference and Consciousness*.⁵ As we shall see, they agree with me that conscious perception is necessary for demonstrative thought, but they disagree with me about *why* it is necessary. Therefore, it will be instructive to compare and contrast these theories, since they offer importantly different accounts of the role of conscious perception in demonstrative thought. I begin with Evans, whose seminal work provides a natural starting point for theoretical reflection on the nature of demonstrative thought and the role of perception in demonstrative thought.

I

What is demonstrative thought? Rather than assuming any particular theoretical account from the outset, we can fix ideas with some examples. Suppose I am surrounded by white mugs and then blindfolded. In that case, I could point to one of the mugs at random and say, "That mug is white," but I would not thereby express a demonstrative thought about the mug. Rather, I would be thinking of it by description, as the mug to which I am now pointing. But if I were to remove the blindfold and take a look at the mug, then I would be in a position to think a demonstrative thought about the mug. As Evans puts the point, "Thinking about an object demonstratively is thinking about an object in a way which crucially depends upon the subject's currently *perceiving* that object."⁶

As this example illustrates, there is a distinction between descriptive and demonstrative thought about an object. Thinking demonstratively

⁵ Gareth Evans, *The Varieties of Reference* (New York: Oxford, 1982); John Campbell, *Reference and Consciousness* (New York: Oxford, 2002).

⁶ Evans, *op. cit.*, p. 72. Subsequent references to this work are given in the text throughout section I.

about an object is not just a matter of thinking about it by description, as the object that one is currently perceiving. The crucial difference is captured by Evans's observation that one cannot think about an object demonstratively unless one currently perceives it. By contrast, one can think about an object—say, Bismarck—as the object that one is currently perceiving even if one is not in fact perceiving it. Evans makes a closely related point in quoting G. E. Moore: “Can we say ‘that thing’ = ‘the thing at which I am pointing’ or ‘the thing to which this finger points’ or ‘the nearest thing to which this finger points’? No because the prop[osition] is not understood unless the thing in question is *seen*” (305n).

There are further differences. For example, one cannot think about an object by description as the object that one is currently perceiving without using the concepts of perception and the first person. But one can think about an object demonstratively without using and, indeed, without even having these concepts. Moreover, Evans argues that, in order to acquire the concepts of perception and the first person, one already needs to have demonstrative concepts in place. In particular, grasping the concept of perceptual experience requires a capacity for self-ascribing perceptual experiences to oneself, which draws upon the very same concepts, including demonstrative concepts, that are used in forming beliefs about the external world (227).

Finally, if I perceive multiple objects, then there will be no unique object that satisfies the description “the object that I am now perceiving.” To secure uniqueness, I will have to flesh out the description by means of further properties. But what if I am perceiving a collection of qualitatively identical but numerically distinct objects? In that case, I can distinguish them only by their perceived location. But in many cases, as in Evans's case of a bottle of pills spilled on a tabletop, our perceptual ability to distinguish places depends upon our perceptual ability to distinguish the objects located at those places. Thus, he writes, “The Idea of a point p in egocentric space, precise enough to be adequate to individuate the pill, exists only because there is something at p —the pill—for the subject's perception to latch on to...the Idea of p depends upon the perception of the pill, and hence is equivalent to the Idea ‘where that pill is’” (172–73).

Demonstrative thought cannot be reduced to descriptive thought about the objects of one's demonstrations. As Evans puts it, “This gets things completely the wrong way round: it is the fact that I have my gaze fixed upon the thing, not the idea that I have my gaze fixed upon something, that determines which object is the object of my thought” (173). Here, Evans insists on the explanatory role of perception in enabling demonstrative thought: it is my perception of the object that

explains how I am able to think demonstratively about that object. But how does perception play this explanatory role? Evans's proposal is that perception enables us to think demonstrative thoughts about objects by providing us with information about the object which is causally derived from the object in question. When someone thinks a demonstrative thought about an object, he exploits an information link with the object. In this sense, demonstrative thoughts are *information-based* thoughts.⁷

Evans argues that the mere existence of a perceptual information link with an object is not sufficient to enable demonstrative thought about the object in the absence of certain psychological capacities, including the capacity to form beliefs about the object, to locate the object in space, and to keep track of its movements through space. Arguably, the second and third conditions are too demanding, since one can think demonstrative thoughts about an object whose location is misperceived or whose movements are too fast and sudden for perceptual tracking. However, the first condition seems necessary if one's information link is to enable demonstrative thought about the object in question. To flesh out the proposal in more detail, one has a demonstrative concept or way of thinking of an object only if one has perceptual information from the object which one is disposed to use in forming beliefs about the object, without mediation by any background beliefs. As Evans formulates this condition, "[A] subject who has a demonstrative Idea of an object has an *unmediated* disposition to treat information from that object as germane to the truth and falsity of thoughts involving that Idea" (146).

If this is the role that perceptual information plays in enabling demonstrative thought, we can ask: what must perceptual information be like in order to play this role? Evans claims that perceptual information is belief independent, in the sense that it is independent of the subject's beliefs about the world, and that it is nonconceptual, in the sense that it does not involve the exercise of conceptual abilities of the kind that are exercised in belief formation. However, he nowhere claims that perceptual information must be conscious. Indeed, he explicitly denies this:

So far I have been considering the non-conceptual content of perceptual informational states. Such states are not *ipso facto* perceptual *experiences*—that is, states of a conscious subject. However addicted we may be to

⁷ In the category of information-based thought, Evans includes not only demonstrative thought, but also recognitional thought and thought involving proper names. The distinctive feature of demonstrative thought is that it requires a current information link with the object of thought.

thinking of the links between auditory input and behavioural output in information-processing terms—in terms of computing the solution to simultaneous equations—it seems abundantly clear that evolution could throw up an organism in which such advantageous links were established, long before it had provided us with a conscious subject of experience. (157–58)

Evans mentions blindsight as an example of unconscious perceptual information. The question, then, is whether there is anything in Evans's theory to exclude the possibility that a blindsighted subject could form demonstrative thoughts on the basis of unconscious perceptual information. His theory appeals to the existence of an information link and its functional role in enabling various psychological capacities, such as locating, tracking, and forming beliefs about an object. On the face of it, however, there is nothing in Evans's theory to rule out the possibility that unconscious perceptual information plays the requisite functional role. In fact, the situation is rather more complicated. Evans writes:

[W]e arrive at conscious perceptual experience when sensory input is not only connected to behavioural dispositions in the way I have been describing—perhaps in some phylogenetically more ancient part of the brain—but also serves as the input to a *thinking, concept-applying, and reasoning system*; so that the subject's thoughts, plans and deliberations are also systematically dependent on the informational properties of the input. When there is such a further link, we can say that the person, rather than just some part of his brain, receives and possesses the information. (158)

Here, Evans sketches a broadly functionalist theory of consciousness.⁸ The claim is that perceptual information is conscious if it serves as input to a thinking, concept-applying, and reasoning system—that is, by the formation of demonstrative and other information-based thoughts. In other words, it is a sufficient condition for perceptual information to be conscious that it serves as an input for demonstrative thought. Equivalently, it is a necessary condition for perceptual information to serve as an input for demonstrative thought that it is conscious. Hence, Evans's functionalist theory of consciousness rules out the possibility that a blindsighter could form demonstrative thoughts on the basis of unconscious perceptual information. A blindsighter who thinks demonstrative thoughts would be a kind of

⁸ Compare Michael Tye's PANIC theory, which identifies phenomenal character with Poised Abstract Nonconceptual Intentional Content, that is, nonconceptual representation which is poised to make an impact on the conceptual system. See Tye, *Ten Problems of Consciousness* (Cambridge: MIT, 1995).

partial functional zombie, since his unconscious perceptions would play the functional role of our own conscious perceptions. However, the possibility of functional zombies is ruled out by any functionalist theory of consciousness.

How plausible is Evans's functionalist theory of consciousness? A functionalist theory of consciousness aims to explicate the nature of consciousness by specifying functional conditions that are both necessary and sufficient for consciousness. However, Evans's theory is incomplete, since it provides only sufficient conditions. A standard objection to sufficiency is that functional zombies are possible, but this objection lacks dialectical force in the present context, since what is at issue is precisely whether there could be a certain kind of partial functional zombie—namely, a blindsighted subject who thinks demonstrative thoughts on the basis of unconscious perceptual information. Nevertheless, we can ask whether Evans's theory explains *why* a functional zombie is impossible by considering how his functionalist theory of consciousness might be elaborated to yield conditions that are both necessary and sufficient.

The obvious proposal is that what makes perceptual information conscious is the fact that it serves as input to the conceptual system for use in demonstrative thought. However, the equally obvious objection is that this is an over-intellectualization, since conceptual capacities are not necessary for consciousness. Evans himself objects to higher-order thought theories of consciousness on the grounds that "experience can antedate thoughts about it," but he continues, "although it is true that our intuitive concept requires a subject of experience to have *thoughts*, it is not thoughts about the experience that matter, but thoughts about the world" (158). Yet, surely experience antedates not only thoughts about experience but also thoughts about the world? Indeed, Evans himself imposes the *generality constraint*, according to which the conceptual capacities involved in thought must be systematically recombinable (100–05). However, it is unlikely that cognition in higher animals, such as chimpanzees, is sufficiently systematic to meet these conditions for conceptual thought.⁹ Presumably, though, it would be grossly implausible to deny that these animals are subjects of conscious perceptual experience.

An alternative proposal is that what makes perceptual information conscious is the fact that it serves as input to a central cognitive system, which may be either a conceptual or a nonconceptual system. On this proposal, the experiences of nonhuman animals need not

⁹ For several compelling examples, see Susan Hurley, "Making Sense of Animals," in Hurley and Matthew Nudds, eds., *Rational Animals?* (New York: Oxford, 2006), pp. 139–71.

serve as input to a conceptual system for use in thought, so long as they serve as input to a nonconceptual cognitive system for use in other executive functions, such as the control of action. This proposal avoids the objection to necessity but only at the cost of inviting an objection to sufficiency. For while it may be sufficient for perceptual information to be conscious that it serves as input for demonstrative thought, it is not sufficient that it serves as input to a central cognitive system that plays a role in the control of action. On the face of it, there is nothing to rule out the possibility of a central cognitive system that is wholly comprised of unconscious informational states.¹⁰

A further objection is that these functionalist proposals threaten to undermine the causal-explanatory role of consciousness.¹¹ Conscious perceptual experience does seem to play a causal-explanatory role in enabling us to think demonstrative thoughts about the world around us, although it is a further question whether its role is indispensable. Assuming functionalism, however, the fact that one's perceptual information is conscious plays no substantial role in the causal explanation of demonstrative thought. Rather, the fact that it is conscious is merely a consequence of its role in the explanation of demonstrative thought, since what it is for perceptual information to be conscious is just for it to serve as an input for demonstrative thought. Therefore, consciousness is reduced to the status of a mere epiphenomenon in the causal explanation of demonstrative thought.

However, one might accept Evans's claim that there is a necessary connection between consciousness and demonstrative thought even if one rejects his explanation in terms of a functionalist theory of consciousness. The proposed explanation is that it is essential to the nature of *consciousness* that perceptual information is conscious if it serves as an input for demonstrative thought. But there is an alternative explanation, according to which it is essential to the nature of *demonstrative thought* that it is formed on the basis of perceptual information that is conscious. In other words, the necessary connection between consciousness and demonstrative thought may derive not from the nature of consciousness, but rather from the nature of demonstrative thought.¹²

¹⁰ Consider the role of cognitive maps in insect navigation, which integrate perceptual information with stored information for use in the control of action. For an overview, see Charles Gallistel, *The Organization of Learning* (Cambridge: MIT, 1990).

¹¹ See also Campbell, *op. cit.*, chapter 7.

¹² Kit Fine argues that claims of essence, unlike claims of necessity, are sensitive to source. See Fine, "Essence and Modality," in James Tomberlin, ed., *Philosophical Perspectives 8: Logic and Language* (Atascadero, CA: Ridgeview, 1994), pp. 1–16.

II

In *Reference and Consciousness*, Campbell argues that conscious perceptual attention to an object is necessary for thinking demonstrative thoughts about the object. He argues that grasping a demonstrative concept of an object is a matter of knowing its reference—that is, knowing to which object it refers. And he argues that conscious perceptual attention to an object is what provides us with our knowledge of the reference of demonstrative concepts. So, like Evans, but for different reasons, he argues that blindsighted subjects cannot think demonstrative thoughts on the basis of unconscious perceptual information. They cannot grasp demonstrative concepts of the objects in their blind field, since they do not know which objects are in question.

To make this point intuitively compelling, Campbell asks us to imagine what it is like to experience a “sea of faces”:

[Y]ou and I are sitting at a dinner table with a large number of people around and you make a remark to me about ‘that woman’. There are a lot of people around; I can’t yet visually single out which one you mean. So on anyone’s account, I do not yet know which woman you are talking about. Suppose now that we add to the example. My visual experience remains as before: a sea of faces. I cannot consciously single out the person you mean. All I get consciously is the sea of faces. But now we add some of what the blindseer has.... So I can make reliable guesses about what the person is eating, wearing, and so on, as well as reaching and pointing appropriately. But so long as my conscious experience remains a sea of faces, there is an ordinary sense in which I do not know who you mean.¹³

The suggestion here is that it does not matter how much information you receive from the object or how you are able to use it in the control of action, reasoning, and verbal report. In the absence of conscious perceptual attention to the object, there is an intuitive sense in which you do not know which object is in question. But if you do not know which object is in question, then you cannot grasp demonstrative concepts of the object.

It may be objected that there is an intuitive sense in which you do know which object is in question.¹⁴ After all, if you are in the same position as the super-blindsighter, then the perceptual information that you receive from the object enables you to locate the object and to track its movements through space, as well as to give reliable reports about its properties. Of course, the obvious response is that

¹³ Campbell, *op. cit.*, pp. 8–9. Subsequent references to this work are given in the text throughout section II.

¹⁴ This objection is made by Sean Kelly, “Reference and Attention: A Difficult Connection,” *Philosophical Studies*, cxx, 1–3 (2004): 277–86.

there remains an intuitive sense in which you do not know which object is in question, which is the sense that is relevant for grasping demonstrative concepts. However, it is not clear how much weight this response can bear in the absence of further theoretical considerations.

All sides can agree that the way in which the super-blindsighter thinks about the objects in his blind field is different from the way that you and I think about the objects that we experience. The question is what this difference amounts to. Campbell argues that our thoughts are genuinely demonstrative thoughts, whereas those of the super-blindsighter are merely descriptive thoughts. But the alternative is to say that we think demonstrative thoughts on the basis of conscious perceptual experience, whereas the super-blindsighter thinks demonstrative thoughts on the basis of unconscious perceptual information. The question is whether consciousness is an essential feature of demonstrative thought or whether it is merely an accidental feature of the way in which we happen to think these thoughts. To decide this question, we need to supplement the appeal to commonsense intuitions by means of a more fully developed theory of demonstrative thought.

Campbell himself would be the first to concede this point. After all, the main aim of *Reference and Consciousness* is to develop a theory of demonstrative thought which purports to explain why the role of consciousness is essential. The centerpiece is Campbell's account of the relationship between knowing the reference of a demonstrative concept and one's way of using the concept in thought. According to what he calls *the classical view*, knowing the reference of a demonstrative concept is what causes and justifies one's ways of using the concept in thought. The classical view provides a functional characterization of the state that constitutes knowing the reference of a demonstrative concept. This state, whatever it is, causes and justifies one's use of particular ways of verifying and acting upon propositions involving the demonstrative concept. Campbell goes on to argue that conscious perceptual attention is the state that occupies this functional role.¹⁵ Therefore, he concludes that conscious perceptual attention to an object is what constitutes our knowledge of the reference of demonstrative concepts of the object. This line of argument is summarized in the following passage:

Knowledge of the reference of the demonstrative is what causes and justifies the use of particular procedures to verify and find the implications of

¹⁵ Campbell claims that conscious perceptual attention occupies this role only when certain background conceptual capacities are in place. Therefore, conscious perceptual attention does not constitute knowledge of the reference of demonstrative concepts in conceptually unsophisticated creatures.

propositions containing the demonstrative. Conscious attention to the object, I will argue, is what causes and justifies the use of particular procedures for verifying and finding the implications of propositions containing the demonstrative. Hence, knowledge of the reference of the demonstrative is provided by conscious attention to the object. (25–26)

How exactly does conscious perceptual attention play its role in causing and justifying our use of demonstrative concepts in thought? Campbell locates its functional role at the computational level of information-processing mechanisms. He claims that conscious perceptual attention plays a role in setting in motion and defining the targets for the unconscious information processing that underpins our ways of using demonstrative concepts in thought. Suppose you want to perform an action or to verify a proposition about some demonstratively identified object. If you are to succeed in this task, then your information-processing mechanisms must solve certain computational problems. But in order to solve these computational problems, they must be able to select the right kind of unconscious information to be processed. How is this achieved? Campbell's proposal is that conscious perceptual attention plays a crucial role in the selection of information by identifying the object that is the target of the underlying information processing.¹⁶

Without going into all the details of Campbell's complex and sophisticated account, it may be helpful to consider an example. Suppose your task is to determine whether an object x is enclosed within the boundaries of a looped figure. How do we solve this task? According to Shimon Ullman, the visual system makes use of a kind of "coloring" operation, which spreads outwards from the target object x in all directions until it reaches a boundary; this operation yields the answer that the x is enclosed if and only if the coloring operation comes to an end.¹⁷ Campbell's claim is that the role of conscious perceptual attention is to set the targets for this unconscious computational process by selecting the object x as the starting point for the coloring operation.

The role of conscious perceptual attention, then, is to define the targets for the unconscious information processing that underpins our use of demonstrative concepts in thought. But why can't this target-setting role be played by anything else? For example, in the super-blindsight example, there must be something remote from

¹⁶ Compare David Milner and Melvyn Goodale's proposal that conscious visual processing in the ventral stream sets the targets for unconscious visual processing in the dorsal stream. See Milner and Goodale, "Attention, Consciousness, and the Coordination of Behaviour," in *The Visual Brain in Action* (New York: Oxford, 1995).

¹⁷ Shimon Ullman, *High Level Vision: Object Recognition and Visual Cognition* (Cambridge: MIT, 1996).

consciousness that plays the role of defining the targets for the information processing that underpins actions and verbal reports directed towards a particular object. Otherwise, we cannot explain the reliability of those actions and verbal reports. But then why suppose that it is essential for demonstrative thought that this target-setting role should be played by conscious perceptual attention, rather than by something entirely remote from consciousness?

Campbell's answer is that conscious experience of objects is necessary for thinking of objects in categorical terms, rather than merely in dispositional terms. Intuitively, we do not think of objects merely in terms of their dispositions to enter into certain sorts of causal relations. Rather, we think of objects as the categorical basis of their dispositions. Campbell claims that we cannot explain how we are able to think of objects in categorical terms except by appealing to the fact that conscious experience relates us to categorical objects themselves and not merely their associated functional dispositions. Moreover, this is what he takes to explain why subjects with blindsight are unable to think demonstrative thoughts about objects in their blind field. They do not represent the objects in their blind field as categorical, but merely in terms of their possession of certain dispositions. For instance, they represent the Gibsonian "affordances" that facilitate certain ways of acting on those objects, but they do not represent the categorical grounds of their affordances. This, according to Campbell, is precisely what is missing in blindsight:

But what is the [blindsighted] subject missing? If the subject reaches and grasps successfully, the subject nonetheless does not know why the reaching and grasping has been successful. That is the real reason why such a subject, no matter how fast, accurate, and reliable she may become, is still said to be 'only guessing'. All the subject has is the fact of success in action, without any understanding of why she has been successful. The subject has been right in thinking that there are these affordances there, but does not know why the world has afforded just this and that. (144)

I will not dispute Campbell's claim that a blindsighted subject cannot think of the objects in his blind field in categorical terms, rather than merely in dispositional terms. However, it is not clear to me that this claim represents much of an advance on the initial intuition that the blindsighter cannot think about those objects demonstratively, but only by description—say, as the possessors of certain dispositional characteristics. The question at issue here is not whether this intuition is correct, but whether we can make any theoretical sense of it. My aim in the remainder of this section is to raise three challenges to the theoretical account that Campbell proposes.

Why is conscious experience necessary for thinking of objects in categorical terms? Campbell claims that we cannot explain our categorical conception of objects except by appeal to a *relational* view on which experience is a direct relation between the subject of experience and the categorical objects and properties in his environment. But why not appeal instead to a *representational* view on which experience is a relation between the subject of experience and a representational content? Campbell argues on the one hand that a representational view cannot explain why experience represents categorical objects and properties, as opposed to associated complexes of dispositions; on the other hand, he argues that this is exactly what a representational view of experience needs to explain. However, Campbell's argument overlooks the distinction between conceptual and nonconceptual forms of representation. If we assume that experience nonconceptually represents objects as categorical, then we can appeal to this fact in explaining how we conceptually represent objects as categorical in thought.¹⁸ The first challenge, then, is to explain why we need a relational view of experience, as opposed to a representational view, in order to explain our categorical conception of objects.

The second challenge is to explain why we need a relational view of *experience*, as opposed to a relational view of *perception*, in order to explain our categorical conception of objects. Campbell argues that conscious experience explains our conception of objects as categorical by putting us in direct relation to categorical objects themselves. But why does this perceptual relation have to be conscious? On some empirical theories of vision, there are unconscious visual mechanisms that put us in direct relation to objects. Zenon Pylyshyn, for example, argues that early visual processing involves a limited number of visual indexes, or "FINSTs," which function by demonstrating objects and tracking their movements without representing their locations or any other properties.¹⁹ This contrasts with a more orthodox picture, on which the representation of objects is constructed from more basic representations of properties by means of a process that binds properties together by their represented locations.²⁰ It is, of course, an empirical question which of these views best describes the actual workings of the visual system. However, if Pylyshyn's view is even possibly true, then it seems to provide a counterexample to the

¹⁸ For a version of this proposal, see Christopher Peacocke, "Does Perception Have a Nonconceptual Content?" this JOURNAL, xcvi, 5 (May 2001): 239–64.

¹⁹ Zenon Pylyshyn, "Visual Indexes, Preconceptual Objects and Situated Vision," *Cognition*, lxxx, 1 (June 2001): 127–58.

²⁰ Anne Treisman and Gary Gelade, "A Feature Integration Theory of Attention," *Cognitive Psychology*, xii, 1 (January 1980): 97–136.

claim that conscious experience is necessary for demonstrative, as opposed to descriptive, reference to objects. The second challenge, then, is to explain why conscious perceptual *experience* is necessary for demonstrative reference.

The third and final challenge is to explain why conscious perceptual *attention* is necessary for demonstrative thought. Campbell uses the Sea of Faces example to prompt the intuition that conscious experience of an object is not sufficient for demonstrative thought about the object unless one is consciously attending to the object. But the question is whether his theoretical account of demonstrative thought succeeds in explaining this intuition. Campbell imposes two conditions that perception must meet to provide a basis for demonstrative thought. First, perception must be conscious to explain our conception of objects as categorical by putting us in relation with categorical objects themselves, rather than merely their associated dispositions. Second, perception must involve attention in order to play its functional role in defining the targets for the information processing that underpins our use of demonstrative concepts in thought. Campbell's proposal is that only conscious perceptual attention satisfies both of these conditions at once.

The problem is that both of Campbell's conditions are satisfied in the Sea of Faces case, but in the absence of conscious perceptual attention. First, the subject's conscious experience relates him to various objects in the scene, which nevertheless do not engage his conscious attention. Second, his conscious experience plays the right kind of functional role in defining the targets for the information processing that underpins his actions and verbal reports concerning the objects in question. Intuitively, however, the subject is unable to think demonstrative thoughts about these objects, so long as his experience remains a sea of faces. Therefore, Campbell's proposal fails to explain the intuitions that the Sea of Faces example was designed to elicit.

The Sea of Faces case illustrates an important contrast between two concepts of attention which should be carefully distinguished.²¹ In much recent empirical work, attention is operationally defined in terms of its functional role in selecting information for certain kinds of processing. In this functional sense, subjects with blindsight may attend to objects in the blind field.²² However, the functional concept

²¹ For further discussion of the distinction between phenomenal and functional concepts of attention, see Declan Smithies, "Attention as Rational-Access Consciousness," in Christopher Mole, Smithies, and Wayne Wu, eds., *Attention: Philosophical and Psychological Essays* (New York: Oxford, 2011), pp. 247–73.

²² See Robert Kentridge, Charles Heywood, and Weiskrantz, "Attention without Awareness in Blindsight," *Proceedings of the Royal Society*, B266 (1999): 1805–11.

of attention as selection of information from an object may be contrasted with the phenomenal concept of attention as a distinctive way of being conscious of an object. In this sense of attention, there is a phenomenal contrast between objects in the attended foreground and objects in the unattended background of conscious experience. Campbell uses the metaphor of “experiential highlighting” to convey this phenomenal concept of attention:

If I am to understand a demonstrative referring to an object, it is not enough merely that the object be there somewhere in my visual field; I have to attend to it. But the attention that is needed here is, as it were, a matter of experiential highlighting of the object; it is not enough that there be some shifts in the architecture of my information-processing machinery, remote from consciousness. (2)

In the Sea of Faces case, the functional and phenomenal concepts of attention come apart. There is functional selection of information from the target object, but there is no experiential highlighting of the target object. Intuitively, what is necessary for demonstrative thought about an object is not mere selection of information from the object, but experiential highlighting. To explain this, however, we need to look elsewhere.

III

My aim in what follows is to propose an alternative to Campbell’s account of the role that consciousness plays in explaining our grasp of demonstrative concepts. Following Campbell, I will assume that consciousness explains our grasp of demonstrative concepts by virtue of its role in causing and justifying our ways of using those concepts in thought. However, I will offer a distinctive account of why the role of consciousness is essential. On Campbell’s account, consciousness plays an essential *target-setting* role: it sets in motion and defines the targets for the information processing that underpins our use of demonstrative concepts in thought. On my account, by contrast, consciousness plays an essential *epistemic* role: it enables subjects to use demonstrative concepts in forming immediately justified beliefs about objects in the world around them.

The crucial difference between these two accounts is that they are located at different levels of psychological explanation. Campbell’s account is located at what we might call the *computational* level, whereas mine is located at the *rational* level.²³ Rational and computational

²³ Compare Daniel Dennett’s related distinction between personal and subpersonal levels of explanation. See Dennett, *Content and Consciousness* (London: Routledge, 1969).

processes are in many ways alike. Both are intentional processes, which involve causal transitions between intentional states that are causally sensitive to the intentional contents of those states. However, rational and computational processes are subject to different kinds of normative evaluation. Rational processes, including deductive and inductive inference, as well as noninferential modes of belief revision, are subject to evaluation in terms of distinctively epistemic norms of rational justification. Computational processes, on the other hand, are subject to evaluation in terms of distinctively computational norms of proper functioning. It does not make sense to ask whether one's visual system is rationally justified in performing a computation that yields a visual representation of the distal environment or fine-tunes the spatial parameters of a visually guided action.²⁴

It is consistent with my proposal that consciousness plays an important functional role at the computational level as well as the rational level. There is certainly no commitment to the claim that these levels are causally isolated from one another. It is more likely that consciousness serves as a common cause of psychological processes at both levels in such a way that its epistemic role at the rational level is underpinned by its target-setting role at the computational level. Nevertheless, we should distinguish between two questions: (1) What role is actually played by conscious perceptual attention? (2) What role could only be played by conscious perceptual attention? In the previous section, I argued that the target-setting role of consciousness could have been played by something entirely remote from consciousness; in this section, I will argue that consciousness is essential for playing an epistemic role, which could not be played by anything else.

My overall strategy will be to argue from two premises: the first premise articulates an epistemic condition for grasping demonstrative concepts, while the second premise makes a claim about the epistemic role of consciousness. Together, these two premises yield the conclusion that consciousness plays an essential role in explaining our grasp of demonstrative concepts. In this section, I will develop the argument for the role of conscious perceptual experience; in the next section, I will consider whether the argument can be generalized in such a way as to extend to the role of conscious perceptual attention. The basic argument can be summarized as follows:

²⁴ Note that Campbell uses the term "justification" in a broad sense that includes both rational and computational norms, but this should not obscure the distinction between these two different subspecies of norms.

The Experience Argument

- (1) One has a demonstrative concept of an object *o* only if one has information about *o* which provides immediate, defeasible justification to form beliefs about *o*.
- (2) One has information about *o* which provides immediate, defeasible justification to form beliefs about *o* only if one has conscious perceptual experience of *o*.
- (3) One has a demonstrative concept of an object *o* only if one has conscious perceptual experience of *o*.

The first premise is an instance of a more general thesis about the epistemic constraints on concept possession. What is it to possess a concept? To have a concept is to have a kind of mental representation.²⁵ But not just any kind of mental representation counts as a concept. For example, David Marr's computational theory of vision posits mental representations in the visual system which represent such things as edges, blobs, and zero-crossings.²⁶ And yet there is no reason to suppose that anyone has the concept of a zero-crossing unless they are already familiar with Marr's work. So, what is it to have the concept of a zero-crossing? An obvious answer is that to have the concept of a zero-crossing is to have a capacity for thinking about zero-crossings as such.²⁷ But this merely defers the question: what is it to think about zero-crossings as such if it is not enough to have mental representations in early vision which represent zero-crossings?

On the assumption that mental representations are functionally individuated, we can distinguish concepts from other mental representations by their distinctive functional role in our mental lives. But what is the distinctive functional role of a concept? A plausible answer is that concepts are mental representations that are epistemically individuated by their disposition to play a role in rational processes. Mental representations in early vision are not concepts because they are disposed to play a role in computational processes, which are not subject to evaluation in terms of the distinctively epistemic norms that apply to rational processes.²⁸

²⁵ Concepts are sometimes construed not as mental representations, but as abstract objects to which we are related by our conceptual mental representations. But this is merely a terminological issue, since what I have called "concepts" might equally be called "conceptual mental representations."

²⁶ David Marr, *Vision* (New York: Freeman, 1982).

²⁷ Jerry Fodor, *Concepts: Where Cognitive Science Went Wrong* (New York: Oxford, 1998).

²⁸ For this reason, my claim that consciousness is essential for our grasp of demonstrative concepts is compatible with Pylyshyn's claim that there are demonstrative mental representations in early vision.

We can formulate the epistemic constraints on concept possession in terms of a *possession condition*, which specifies the dispositions that a subject must have as a condition for possessing the concept.²⁹ If concepts are individuated in epistemic terms, then the dispositions mentioned in the possession condition for a concept must be rational dispositions. However, it does not follow that all of our dispositions to use a concept are rational dispositions, since not all of our dispositions to use a concept need enter into the individuation of the concept. In particular, rational dispositions are privileged over irrational dispositions in such a way that only rational dispositions enter into the individuation of a concept. This explains why we can make sense of sharing our concepts with a perfectly rational thinker, who has no irrational dispositions, although we cannot so easily make sense of sharing our concepts with a perfectly irrational thinker, who has no rational dispositions.³⁰

What are the possession conditions for demonstrative concepts? According to Evans, one has a demonstrative concept of an object only if one has perceptual information from the object which one is disposed to use in forming beliefs about the object without mediation by any background beliefs. If this is a rational disposition, we may conclude that one's perceptual information from the object provides one with immediate justification to form beliefs about the object. Otherwise, it would be irrational for one to form beliefs on the basis of perceptual information without mediation by background beliefs. Thus, one has a demonstrative concept of an object only if one has perceptual information from the object, which provides one with immediate, defeasible justification to form beliefs about the object. This is enough to establish our first premise.

So far, I have been arguing that one's perception of an object must play an epistemic role in order to provide one with a demonstrative concept of the object. Now we can ask: what must one's perception be like in order to play this epistemic role? Here, I claim that the phenomenology of conscious perceptual experience plays an essential epistemic role. It is because my experience has the phenomenology of confronting me with objects and properties in the world around me that it causes me to form beliefs about the world around me and justifies me in doing so. Moreover, my justification has its source

²⁹ See Peacocke, *A Study of Concepts* (Cambridge: MIT, 1992), chapter 1.

³⁰ Compare Ralph Wedgwood, "The Normativity of the Intentional," in Brian McLaughlin and Ansgar Beckermann, eds., *The Oxford Handbook of the Philosophy of Mind* (New York: Oxford, 2009), pp. 421–36, and "Normativism Defended," in McLaughlin and Jonathan Cohen, eds., *Contemporary Debates in the Philosophy of Mind* (Malden, MA: Blackwell, 2007), pp. 85–101.

in the phenomenology of experience, rather than in background beliefs about the reliability of my experience. After all, it is not clear what could justify my background beliefs about the reliability of my experience besides my experiences themselves. Of course, the justification provided by my experience is *defeasible* in the sense that it can be defeated by justification to believe that my experience is unreliable. But in the absence of defeaters, my justification to take experience at face value is *immediate* in the sense that it does not depend on my having independent justification for background beliefs about the reliability of my experience.³¹

The epistemic role of consciousness is best illustrated by reflection on cases in which consciousness is missing. Consider the epistemic predicament of subjects with blindsight. Do subjects with blindsight have immediate justification to form beliefs on the basis of unconscious perceptual information about objects in the blind field? What goes missing in blindsight is any phenomenology of confrontation with objects and properties in the blind field. This is why subjects with blindsight do not spontaneously form beliefs about objects in the blind field. Under forced-choice conditions, they are reliable in certain kinds of discrimination tasks, but they tend to regard their responses as mere guesswork and express surprise when informed of their reliability. From their own subjective perspective, there is nothing to distinguish their verbal reports about the blind field from mere guesswork. Intuitively, then, it is no more rational for them to form beliefs about the blind field than it is to form beliefs on the basis of blind guesswork.

Reflection on blindsight suggests that the mere reliability of one's information link with an object is not sufficient to provide one with justification to form beliefs about the object. Compare Laurence Bonjour's well-known example of the clairvoyant, Norman, who forms beliefs about the location of the President on the basis of a reliable clairvoyant faculty, although he lacks any justification to believe that he has this reliable faculty.³² Intuitively, despite their

³¹ This is what James Pryor has called a "dogmatist" theory of justification. Crispin Wright has argued for an opposing view, on which justification from experience depends upon independent justification to believe (or, in his terms, entitlement to accept) that experience is reliable, which we have *by default*. This view is also consistent with an epistemic asymmetry between conscious and unconscious perception such that we have default justification to believe that conscious perception is reliable, but we need to earn justification to believe that unconscious perception is reliable. See Pryor, "The Skeptic and the Dogmatist," *Noûs*, xxxiv, 4 (December 2000): 517–49; and Wright, "Warrant for Nothing (and Foundations for Free)?" *Supplement to the Proceedings of the Aristotelian Society*, lxxviii, 1 (July 2004): 167–212.

³² Laurence Bonjour, *The Structure of Empirical Knowledge* (Cambridge: Harvard, 1985), p. 41.

reliability, Norman's beliefs are no more justified than beliefs formed on the basis of blind guesswork. This is because there is nothing accessible from Norman's own subjective perspective to distinguish his clairvoyant beliefs from beliefs formed on the basis of guesswork. And crucially, as BonJour notes, "the rationality or justifiability of Norman's belief should be judged from Norman's own perspective rather than from one which is unavailable to him."³³

The argument here rests on a key epistemological assumption, which is that justification depends only on facts that are accessible from one's own subjective perspective or point of view on the world. But why should we accept this assumption? A plausible answer is that these are the only facts that one has to go on in critical reflection about what to believe. So, the underlying rationale for this assumption is that the concept of justification (and, hence, the property that it denotes) is essentially tied to its role in regulating the practice of critical reflection.³⁴ Roughly speaking, we can say that a belief is justified if and only if it has what it takes to survive critical reflection. Therefore, we can argue that Norman's clairvoyant belief is unjustified because it does not have what it takes to survive critical reflection. Compare BonJour's own diagnosis of the case:

Norman's acceptance of the belief about the President's whereabouts is epistemically irrational and irresponsible, and thereby unjustified, whether or not he believes himself to have clairvoyant power, so long as he has no justification for such a belief. Part of one's epistemic duty is to reflect critically upon one's beliefs, and such critical reflection precludes believing things to which one has, to one's knowledge, no reliable means of epistemic access.³⁵

Blindsighted subjects are in the same epistemic predicament as the clairvoyant, Norman. They have a reliable perceptual faculty which enables them to make verbal reports about objects in the blind field on the basis of unconscious perceptual information. However, since this perceptual information is unconscious, they do not have justification to believe in their own reliability, which is why they regard their responses in forced-choice tasks as mere guesswork. Of course, these subjects eventually learn that they are reliable through induction and testimony, in which case they do have justification to form beliefs

³³ *Ibid.*, pp. 43–44.

³⁴ This conception of justification is motivated and developed in much more detail in forthcoming work. See Smithies, "Why Care about Justification?" (manuscript) and "Moore's Paradox and the Accessibility of Justification," *Philosophy and Phenomenological Research* (forthcoming).

³⁵ BonJour, *op. cit.*, p. 42.

about objects in the blind field, but only because of their background justification to believe in their own reliability. So, there is a dilemma in the offing: either they are justified by background beliefs about their own reliability, or they are not justified at all. Therefore, unconscious perception is not sufficient to provide a source of immediate justification to form beliefs about objects in the blind field.

In summary, there is an epistemic asymmetry between conscious perceptual experience and unconscious perception in blindsight. Moreover, we cannot explain this asymmetry except in terms of the presence or absence of consciousness. In other words, perception of an object provides immediate justification to form beliefs about the object only if it is conscious. It may be objected that blindsight, unlike ordinary perception, involves the feeling of guessing, which is a defeater for any immediate perceptual justification that is provided in blindsight. But this fails to account for the super-blindsighter, who forms beliefs spontaneously and confidently on the basis of unconscious perceptual information about objects in the blind field.³⁶ In this case, there is no feeling of guessing, and yet there is nothing besides the feeling of confidence to distinguish the beliefs in question from beliefs formed on the basis of guesswork. However, the mere feeling of confidence is not sufficient to justify anyone's belief—justification is not so easy to come by!

A different suggestion is that what is missing in blindsight is second-order knowledge of the causal basis of one's beliefs.³⁷ In other words, ordinary perceivers know when they form beliefs on the basis of perceptual experience, whereas subjects with blindsight or super-blindsight cannot know the causal basis of their beliefs. However, this fails to account for the epistemic asymmetry between unconscious perception in blindsight and conscious perceptual experience in unreflective subjects. Evidence from developmental psychology suggests that three-year-old children do not understand whether their beliefs are formed on the basis of perception, inference, or testimony.³⁸ However, it is surely an over-intellectualization to deny that

³⁶ Block (*op. cit.*, p. 285) states that the super-blindsighter is "trained to prompt himself at will, guessing without being told to guess," but suppose instead that he forms beliefs spontaneously on the basis of unconscious perception, without any need for prompting himself to guess. This undermines Tye's claim (*op. cit.*, pp. 142–43) that visual representations in super-blindsight are not poised in the right way for PANIC content because they impact on the belief system only indirectly via an act of willing.

³⁷ Michael Ayers suggests that blindsight involves knowing without knowing how one knows: in his terms, this is secondary knowledge, but not primary knowledge. See Ayers, *Locke: Epistemology and Ontology* (New York: Routledge, 1991).

³⁸ Alison Gopnik and Peter Graf, "Knowing How You Know: Children's Understanding of the Sources of Their Knowledge," *Child Development*, LIX (1988): 1366–71.

their beliefs can be immediately justified on the basis of perceptual experience. Arguably, these children are in an epistemic position to know the causal basis of their beliefs, although they lack the psychological capacities to take advantage of this epistemic position. But if so, they are in an epistemic position to know the causal basis of their beliefs only because their beliefs are formed on the basis of conscious perceptual experience.

To illustrate this point, consider the super-*dupe*-blindsighter, who is reliable in forming not only first-order beliefs about objects in the blind field, but also second-order beliefs about the unconscious perceptual states on the basis of which his first-order beliefs are formed.³⁹ Intuitively, his second-order beliefs, just like his first-order beliefs, are no more rational than beliefs formed on the basis of blind guesswork. After all, there is nothing accessible from the subject's own perspective to suggest that they are *not* formed on the basis of guesswork. Unlike the second-order beliefs of the normally sighted, they are not formed on the basis of any conscious perceptual experience. In conclusion, then, the epistemic role of consciousness is what explains the epistemic asymmetry between conscious perceptual experience and unconscious perception in blindsight.

Moreover, the epistemic role of consciousness explains why blindsighted subjects can think *descriptive* thoughts about objects in the blind field but not *demonstrative* thoughts. The crucial point is that they do not satisfy the epistemic constraints on the possession of demonstrative concepts. In particular, their unconscious perception of objects in the blind field does not provide them with immediate justification to form either descriptive or demonstrative beliefs about those objects. This is compatible with thinking descriptive thoughts about those objects, such as the thought that there are objects in the blind field which they cannot see. But given the existence of epistemic constraints on the possession of demonstrative concepts, it excludes the possibility of demonstrative thought.

IV

So far, I have been arguing that conscious perceptual experience plays an essential role in explaining our grasp of demonstrative concepts. I will now consider whether the argument can be generalized in support of the claim that there is also an essential role for conscious

³⁹ The coherence of this example depends on rejecting higher-order thought theories of consciousness. For example, see David Rosenthal, "A Theory of Consciousness," in Block, Owen Flanagan, and Guven Gazeldere, eds., *The Nature of Consciousness: Philosophical Debates* (Cambridge: MIT, 1997), pp. 729–53.

perceptual attention. The most straightforward strategy invokes the *limitation thesis*, which says that one experiences an object only if it captures one's attention.⁴⁰ If the limitation thesis is true, then we can generalize the argument for the role of conscious perceptual experience simply by substituting "attention" for "experience" throughout. But is there any reason to suppose that the limitation thesis is true?

Some have argued that the limitation thesis is supported by empirical results on *inattention blindness*. In one salient example, subjects are asked to count the number of times a basketball is passed among a team of players dressed in matching uniforms.⁴¹ During the task, someone dressed in a gorilla suit walks into the midst of the players, beats his chest, and walks off again. When asked later, many subjects fail to report the occurrence of anything unusual. What explains this surprising result? One possible explanation is that our attention is distracted by the task of counting the passes, so we do not *experience* the gorilla. If this explanation is correct, it provides some evidence for the thesis that we experience an object only if we attend to it. However, an alternative explanation is that our attention is distracted, and so we do not *notice* the gorilla, which supports only the weaker thesis that we notice an object only if we attend to it. It is consistent with this weaker thesis that we sometimes experience an object that we fail to notice, which seems sufficient to explain why we do not report it. Therefore, it is not clear that the limitation thesis is supported by the empirical data.

Is there any reason to suppose that the limitation thesis is false? Some have argued, on broadly introspective grounds, that we experience things that fail to capture our attention and therefore escape our notice. For example, Block suggests that I may be dimly aware of the sound of a drill in the street outside, although I do not notice the sound until it stops. However, there is a problem here. How can I know by introspection that I was aware of the drilling sound all along, since it did not capture my attention until it stopped? More generally, how can we have introspective grounds to suppose that we experience things that fail to capture our attention?

In response, one might appeal to the role of memory: I can remember the sound of the drill just a moment ago. Michael Martin argues that memories typically derive from earlier perceptions and that it is by virtue of their link with earlier perceptions that memories provide

⁴⁰ For a more detailed discussion of arguments for and against the limitation thesis, see Smithies, "Attention as Rational-Access Consciousness."

⁴¹ Daniel Simons and Christopher Chabris, "Gorillas in Our Midst," *Perception*, xxviii, 9 (1999): 1059–74.

information about the past.⁴² On these grounds, he argues that the contents of memories provide defeasible evidence concerning the contents of earlier perceptions. Thus, if I now remember the sound of drilling just a moment ago, then it is reasonable for me to believe that a moment ago I must have perceived the sound of the drill. But why suppose that the contents of memories provide defeasible evidence concerning the contents of earlier *conscious* perceptions? Why not suppose that my memories are derived from earlier perceptions that are unconscious because unattended?

A key point here is that experiential memory is *Janus-faced*: if I can remember the sound of the drill just a moment ago, then I can also remember what it was like for me to hear the sound of the drill just a moment ago. In the same way, I can remember what it was like to experience the agony of toothache after the pain has subsided. In other words, experiential memory provides information not only about past states of the world, but also about past states of conscious experience of the world. Therefore, experiential memory can provide introspective justification for claims about one's past experiences. To illustrate the point, suppose you were suddenly to lose all background conscious experience that lies outside the scope of your attention. If you can remember what it was like for you just a moment ago, then you will notice how this is strikingly different from what it is like for you now. In other words, you will have introspective grounds to believe that a moment ago you were conscious of much more than was occupying your attention at that time. Therefore, introspection can provide reason to believe that the limitation thesis is false.

If the limitation thesis is false, then the objects of one's experience do not always capture one's attention. In other words, there is a *phenomenal* distinction to be drawn between the attended foreground and the unattended background of one's experience. This raises the question of whether there is a corresponding *epistemic* distinction between the attended foreground and the unattended background of one's experience. To illustrate, consider the Sea of Faces example one more time. Suppose your companion asks you questions about an object in your visual field which is not visually salient or highlighted, so that your visual experience is like a sea of faces. If you can guess reliably, this will come as a complete surprise to you. Intuitively, your epistemic predicament is similar to blindsight insofar as forming beliefs about an unattended object is

⁴² Michael Martin, "Perception, Concepts, and Memory," *Philosophical Review*, CI, 4 (October 1992): 745–63.

no more rational than forming beliefs on the basis of blind guesswork. If the object does not engage your attention but rather escapes your notice, then you cannot form immediately justified beliefs about the object. Your beliefs about the object are immediately justified only if your attention is engaged in such a way that you notice the object and its properties.

How should we characterize the epistemic role of attention? One answer is that attention to an object is necessary for having immediate justification to form beliefs about the object. If this is correct, then we can generalize the argument of the previous section by substituting “attention” for “experience” throughout. However, it is difficult to motivate this account of the epistemic role of attention without assuming the limitation thesis.⁴³ Why suppose that attention to an object is necessary for having immediate justification to form beliefs about the object? If we say that attention to an object is necessary for experience to represent the object and its properties, then we assume the limitation thesis. But if we assume that the limitation thesis is false, then attention to an object is not necessary for experience to represent the object and its properties, so why should we suppose that attention to the object is necessary for having immediate justification to form beliefs about the object? In other words, why suppose there is any epistemic asymmetry between the attended and unattended aspects of experience?

My response is that even if attention to an object is not necessary for the object and its properties to be represented in one’s experience, it is necessary for converting the representational contents of experience into the contents of thought. Here, we may contrast two different aspects of the functional role of attention. First, attention plays a role in modulating the representational contents of experience, such that differences in the direction of attention make for differences in represented detail.⁴⁴ Even if the limitation thesis is false, it is still implausible to suppose what Alva Noe has called a snapshot conception of experience, according to which, “You open your eyes and—*presto!*—you enjoy a richly detailed picture-like experience of the world, one that represents the world in sharp focus, uniform detail and high resolution from the center out to the periphery.”⁴⁵

⁴³ I owe this objection to Johannes Roessler. Compare his objections to McDowell’s conceptualism in Roessler, “Perceptual Attention and the Space of Reasons,” in Mole, Smithies, and Wu, eds., *op. cit.*, pp. 274–91.

⁴⁴ For experimental support, see Marisa Carrasco, Sam Ling, and Sarah Read, “Attention Alters Appearance,” *Nature Neuroscience*, vii (2004): 308–13.

⁴⁵ Alva Noe, “Is the Visual World a Grand Illusion?” *Journal of Consciousness Studies*, ix, 5–6 (2002): 1–12, at p. 2.

All the same, attention plays a role not only in *modulating* the contents of experience, but also in *formatting* the contents of experience in such a way as to make them accessible for use in conceptual thought. Thus, attention to an object is necessary for converting the contents of experience into the contents of justified belief.⁴⁶

This suggests an alternative account of the epistemic role of attention. On this account, attention to an object is not necessary for *having* immediate justification to form beliefs about the object, but it is necessary for *using* one's immediate justification in forming beliefs about the object that are immediately justified.⁴⁷ This reveals a crucial difference between genuine blindness and mere inattentional blindness. If one is blind to an object in the sense that one does not experience the object, then one lacks immediate justification to form beliefs about the object. By contrast, if one is merely inattentively blind to an object, in the sense that one experiences the object but it fails to capture one's attention, then one has immediate justification to form beliefs about the object, but one is unable to use this justification in forming immediately justified beliefs about the object.

To illustrate the contrast between these two accounts of the epistemic role of attention, consider the argument that attention to an object is necessary for being justified in trading on the identity of the object in making inferences from the premises "that is *F*" and "that is *G*" to the conclusion "that is *F* and *G*."⁴⁸ Intuitively, one is not justified in forming beliefs about the identity of a particular object unless one attends to the object in question. Even if one is justified in believing that something is *F* and that something is *G*, one is not thereby justified in forming beliefs about which thing is *F* and which thing is *G*; in particular, one is not justified in forming beliefs about whether these things are one and the same. In the absence of attention, one's beliefs about such matters are no more justified than beliefs formed on the basis of blind guesswork. This intuitive point is supported by Anne Treisman's experimental work on "illusory

⁴⁶ I develop this account of the functional role of attention in Smithies, "Attention as Rational-Access Consciousness." There, I argue that attention is what makes information fully accessible for use in the rational control of action, verbal report, and belief formation.

⁴⁷ In the standard terminology, attention is not necessary for *propositional* justification, but it is necessary for *doxastic* justification. One's belief that *p* is doxastically justified if and only if one *has* propositional justification to believe that *p* and, moreover, one *uses* one's propositional justification in believing that *p* on the basis of one's propositional justification to believe that *p*.

⁴⁸ For this argument, see Campbell, *op. cit.*, chapter 5; see also Imogen Dickie, "Visual Attention Fixes Demonstrative Reference by Eliminating Referential Luck," in Mole, Smithies, and Wu, eds., *op. cit.*, pp. 292–322.

conjunctions,” which demonstrates that subjects tend to make mistakes about the identity of an object when attention is drawn away.⁴⁹ For example, subjects report a red “T” when a green “T” and a red “O” are presented together and attention is distracted.

Why is attention to an object necessary for being justified in trading on the identity of the object? According to Treisman’s feature-integration theory of attention, attention to the location of an object is necessary for binding together the properties represented at that location as properties of a single object. Treisman’s theory suggests that attention to an object, or its location, is necessary for trading on the identity of the object because it is necessary for solving the *binding problem*—that is, the problem of binding properties together as properties of a single object. However, it can be misleading to talk about *the* binding problem, since there are multiple binding problems, which arise at multiple levels of psychological reality. In particular, there are distinct binding problems that arise at (i) the level of computational information processing; (ii) the level of perceptual experience; and (iii) the level of conceptual thought. There is empirical evidence to suggest that attention is not necessary for binding at the level of computational information processing.⁵⁰ However, it is a further question whether attention is necessary for binding at the level of perceptual experience or the level of conceptual thought.⁵¹

On my proposal, attention is necessary for solving the binding problem at the level of conceptual thought but not the level of perceptual experience. Attention is not necessary for one’s experience to represent properties as bound to a single object. Moreover, attention is not necessary for one’s experience to provide one with immediate, defeasible justification to believe that properties are bound to a single object and to make inferences that trade on the identity of the object. Nevertheless, attention is necessary for solving the binding problem at the level of conceptual thought: it is necessary for using one’s justification to believe that properties are bound to a single object and to make inferences that trade on the identity of

⁴⁹ Treisman and Hilary Schmidt, “Illusory Conjunctions in the Perception of Objects,” *Cognitive Psychology*, xiv, 1 (January 1982): 107–41.

⁵⁰ Patients with unilateral neglect cannot attend to objects in the left hemifield, but representation of objects in the left hemifield primes performance in recognizing objects in the right hemifield. See Anna Berti and Giacomo Rizzolatti, “Visual Processing without Awareness: Evidence from Unilateral Neglect,” *Journal of Cognitive Neuroscience*, iv, 4 (1992): 345–51.

⁵¹ For a recent discussion that acknowledges some of these complexities, see Treisman, “Consciousness and Perceptual Binding,” in Axel Cleeremans, ed., *The Unity of Consciousness: Binding, Integration, and Dissociation* (New York: Oxford, 2003), pp. 95–113.

the object. Indeed, this is why attention is necessary for demonstrative thought. Grasping demonstrative concepts does not merely require the presence of immediate justification, but also the ability to use it in forming justified beliefs about an object. So, just as before, we can argue for the role of attention in demonstrative thought on the basis of a premise about the epistemic role of attention together with a further premise about the epistemic conditions necessary for the possession of demonstrative concepts:

The Attention Argument

- (1) One has a demonstrative concept of an object *o* only if one has information about *o* which provides immediate, defeasible justification to form beliefs about *o* and which one is able to use in forming immediately justified beliefs about *o*.
- (2) One has information about *o* which provides immediate, defeasible justification to form beliefs about *o* and which one is able to use in forming justified beliefs about *o* only if one has conscious perceptual attention to *o*.
- (3) One has a demonstrative concept of an object *o* only if one has conscious perceptual attention to *o*.

V

This paper began by asking what perception must be like in order to explain our capacity to think demonstrative thoughts about the world around us. I have argued that perception of an object explains our capacity to think demonstrative thoughts about the object by enabling us to form immediately justified beliefs about the object. Moreover, I have argued that perception of an object enables us to form immediately justified beliefs about an object only if it is conscious and attentive. I therefore conclude that perception must be conscious and attentive in order to play its epistemic role in explaining our capacity for demonstrative thought.

There are further questions to be asked about the nature of conscious and attentive perceptual experience. Is experience a relation to objects and properties in the world around us, or is it a relation to a representational content? Does experience involve the exercise of conceptual abilities, or is it a more primitive, nonconceptual state? My arguments for the epistemic role of experience do not depend on any particular account of what experience is like. However, the epistemic role of experience imposes constraints on an account of the nature of experience, since any such account is answerable to the question: what must experience be like in order to play its epistemic role?

There are also further questions to be asked about the nature of demonstrative thought. The scope of this paper is restricted to

demonstrative thought that is based on perception, but we can also think demonstrative thoughts on the basis of memory and testimony. Ultimately, one might hope for a unified account of demonstrative thought that explains what these different varieties have in common. A promising proposal is that any demonstrative concept of an object involves some kind of information link with an object via perception, memory, or testimony, which enables one to form immediately justified beliefs about the object. Moreover, one might expect my arguments for the epistemic role of consciousness and attention to generalize to information links of these various kinds. Suppose one's information link with an object enables one to form immediately justified beliefs about the object only if it is conscious and attended. This yields a more general account of the role of consciousness in demonstrative thought.

Does consciousness play a more general and foundational role in explaining our capacity for conceptual thought? One issue is whether the role of consciousness in demonstrative thought extends to other varieties of information-based thought, including thought that involves the exercise of recognitional capacities or the use of proper names.⁵² A further issue is how much of our conceptual thought ultimately depends on demonstrative thought and other kinds of information-based thought.⁵³ If the dependence is widespread, then this makes a strong case for the classical Russellian thesis that consciousness plays a foundational role in explaining our capacity for conceptual thought.

In *The Problems of Philosophy*, Bertrand Russell writes, "All our knowledge, both knowledge of things and knowledge of truths, rests upon acquaintance as its foundation."⁵⁴ Acquaintance, for Russell, is a conscious state of direct and unmediated awareness of things. Meanwhile, the distinction between knowledge of things and knowledge of truths corresponds to the distinction between our conceptual ability to think about things and our epistemic ability to know truths about those things. So, the Russellian thesis is that consciousness plays a dual role in explaining our conceptual ability to think about things and our epistemic ability to know truths about those things. This raises a question about the relationship between these two aspects of the role of consciousness. Indeed, why should we suppose that there is any single thing that unifies these two distinct roles?

⁵² On recognitional concepts and proper names, see Evans, *op. cit.*, chapters 8, 9, and 11.

⁵³ Compare the argument from massive reduplication in Peter Strawson, *Individuals: An Essay in Descriptive Metaphysics* (London: Methuen, 1959), chapter 1.

⁵⁴ Bertrand Russell, *The Problems of Philosophy* (Oxford: University Press, 1912).

The arguments in this paper suggest a more general account of the relationship between the epistemic role of consciousness and the role of consciousness in thought. The key claim is that there are epistemic constraints on the possibility of conceptual thought. In other words, the role of consciousness in thought is explained by the epistemic role of consciousness together with the epistemic individuation of concepts. Therefore, the epistemic role of consciousness is more fundamental in the order of explanation than is the role of consciousness in thought.

DECLAN SMITHIES

The Ohio State University