subjectivity simply is what 'intrinsicness' amounts to. Another consideration is that, given that the brain is the physical ground of consciousness, we might regard experience as a kind of window into the intrinsic nature of at least this one, very complex, physical entity which we thus find to be mentalistic in nature (see Lockwood 1991). It is then perhaps a natural inference to the ubiquity of the mental, although the sort of experience that characterizes the physically fundamental entities in the world is presumably altogether different and radically simpler than our own complex mental lives, reflecting the differences in complexity between brains and electrons (see Rosenberg 2004, Strawson 2006).

Against these points stands the flat intuitive implausibility of the hypothesis that everything has a mental dimension. But in addition there are some counter-arguments. One is that the physical nature of reality seems to be entirely sufficient to account for everything that happens (this is often called the 'causal closure' of the physical world). If the mental is not itself a physical feature at bottom (via some sort of reductive relation or some other acceptable dependence upon the physical) then it threatens to become *epiphenomenal. A panpsychist might reply that at the fundamental level, the mental features are essential to the causal powers of things (see Rosenberg 2004).

Another objection holds that panpsychism has its own emergence problem (see James 1890/1950:Ch. 6, Seager 1999:Ch. 9). Somehow there is a transition from the 'elemental' mental features of the physical constituents of things to the complex minds possessed by composite entities such as ourselves. If the panpsychist is willing to admit this kind of emergence why not simply opt for an emergentist solution to the whole problem of mind, and avoid the basic implausibility of panpsychism? In reply, it might be noted that emergence of complexes of a given set of features is generally much easier to understand than the apparently radical emergent transformation of matter into consciousness.

Finally, there is a methodological objection to panpsychism. One of our chief metaphysical goals is to understand everything in terms of the best accounts of the world which we currently possess. The physical sciences provide these accounts and they do not avail themselves of the panpsychist option. One might argue that it is thus incumbent upon metaphysicians to exert every effort to understand mind from within the structure provided by the physical sciences. There is a kind of cogency to such an objection, if it is taken to encourage efforts at a naturalistic metaphysics. But such a metaphysics might fail, and it is good to explore options which might come in handy, even if they stretch imagination beyond its usual bounds.

WILLIAM SEAGER

Chalmers, D. (1996). *The Conscious Mind*.
Clifford, W. (1874/1886). 'Body and mind'. In *Fortnightly Review*, December. (Page references are to the 1886 reprint.)
James, W. (1890/1950). *The Principles of Psychology*, Vol. 1.
Levine, J. (2001). *Purple Haze*.
Lockwood, M. (1991). *Mind, Brain and the Quantum: The Compound 'I'*.
McLaughlin, B.(1992). 'The rise and fall of British emergentism'. In Beckermann, A. et al. (eds) *Emergence or Reduction*.
Nagel, T. (1979). 'Panpsychism'. In *Mortal Questions*.
Rosenberg, G. (2004). *A Place for Consciousness: Probing the Deep Structure of the Natural World*.
Seager, W. (1999). *Theories of Consciousness*.
Skrbina, D. (2005). *Panpsychism in the West*.
Strawson, G. (2006). 'Realistic monism: why physicalism entails panpsychism'. *Journal of Consciousness Studies*, 13.
Whitehead, A. N. (1929) *Process and Reality: An Essay in Cosmology*.

perception, philosophical perspectives Perception is a way of acquiring information, beliefs, or knowledge about the world by means of the senses. In philosophy, 'perceive' and its derivatives 'see', 'hear', and the like, are usually taken to be success verbs. Thus, when Macbeth claimed to see a dagger before him when there was no such dagger, he was mistaken; he merely seemed to see a dagger. In fact, he *hallucinated a dagger. A major goal of philosophical theories of perception is to provide an account of perception that differentiates it from hallucination and from other mental occurrences. Section 2 below looks at approaches to the latter, while sections 3 and 4 outline approaches to the former. Another goal is to address the question of how perception can yield and justify belief, thus making it a source of knowledge. In answering this second question philosophy of perception overlaps with epistemology.

Some terminological preliminaries need to be noted. First, when we consciously perceive the world we have 'perceptual experiences'. It is usually taken to be the case that we can also have perceptual experiences when we are hallucinating (and hence not perceiving). Whether the perceptual experiences involved in perception and hallucination are the very same kinds of states is an important question in recent philosophy of perception and supporters of common-kind and disjunctive theories of perception, discussed in sections 3 and 4 below, endorse very different answers.

Secondly, most philosophers hold that perceptual experiences are by definition conscious states. A great deal of philosophy of perception is concerned with the nature of these states. The *sense-datum theory* holds that such states involve perceiving non-physical mind-dependent objects. *Adverbialism* conceives of such states as states in which one is sensing in a certainly way.

**Representationalism* argues that such states represent the world to be a certain way. A great deal of modern philosophy of perception has been concerned with the precise nature of perceptual representation. Sense-datum theory, adverbialism and representationalism are discussed in sections 6–8 below.

Finally, perceptual experiences are said to have **phenomenal character*. This means that there is 'something that it is like' to undergo those experiences. Philosophy of perception comes closest to philosophy of mind when it discusses the nature of perceptual phenomenal character and consciousness and whether a physical account of it can be given. Recently, many philosophers have sought an answer by enquiring about the precise relationship between phenomenal character and representation and whether the former can be explained solely in terms of the latter. Section 8 elaborates on this issue.

1. Perception, sensation, and belief
2. Unconscious perception
3. The common-kind view and the causal theory of perception
4. Disjunctivism
5. Empirically informed direct realist views
6. Sense-datum theory
7. Adverbialism
8. Representational theories

1. Perception, sensation, and belief

Traditionally, philosophers have contrasted perception with sensation. Perception was taken to be a process that involved states that represented—or that were about—something. For example, typical visual experiences had at a beach might represent sand, crabs, or the blueness of the sea. These experiences might accurately represent the beach or misrepresent it, if undergoing an illusion or hallucination. Sensations like pains, itches, and tickles were not taken to be representational. For example, the feeling of pain was not taken to be 'about' anything—it was a mere feeling. At the same time, philosophers have traditionally recognized that sensations and perceptual experiences are alike in some respects. Both types of state have phenomenal character, and which phenomenal character they have determines or partly determines, which particular kind of sensation or experience they are.

Perceptual experiences have also usually been contrasted with beliefs. Although, like perceptual experiences, beliefs have been thought of as representing the world to be a certain way (in the case of belief, the way the subject of the belief takes the world to be) they are dissimilar in other respects. Beliefs need have no phenomenal character (for example, they can be unconscious) whereas perceptual experiences necessarily have phenomenal character. Moreover, as stated above, perceptual experiences have their phenomenal character essentially, but beliefs, qua beliefs, do not. Which particular belief a belief is, say the belief that crabs pinch hard, is a matter solely of which content it has, and any phenomenal character that a particular instance of a belief may have is irrelevant to its being that belief. (Note that many people think beliefs themselves have no phenomenal character—they are simply usually accompanied by states that do.)

However, the traditional view that perceptual experiences are different from sensations and beliefs has been challenged. On the one hand, arguing that sensations and perceptual experiences are not dissimilar, some representational views take sensations to be perceptions of one's own body. For example, pains might be thought of as states that represent damage or disorder at a location in one's body. On the other hand, arguing that perceptual experiences are more akin to beliefs than the traditional view, some doxastic views of experience hold that to have a perceptual experience is simply to believe, or to be inclined to acquire a belief, that we are immediately perceiving some physical object or state of affairs by means of the senses. However, this view is not widely endorsed for, plausibly, unlike belief-like states, experiences are necessarily conscious and occurrent and relatively unaffected by one's other beliefs. Furthermore, the content of perceptual experience is sometimes held to be different from that of belief in various ways, notably by being non-conceptual.

2. Unconscious perception

Can perception occur without a perceptual experience and without any conscious state? Recent empirical findings have led some to answer positively (see UNCONSCIOUS PERCEPTION). Consider the phenomenon of *blindsight, in which people claim to be blind. Nonetheless, when asked to guess what is in front of them in a forced-choice paradigm, they select the right answer more frequently than chance. Is this evidence of unconscious perception? It depends, first, on whether the subject really lacks a perceptual experience. This issue in turn depends on a commonly encountered question in consciousness studies: to what extent can belief or *introspection about experience be inaccurate? Secondly, it depends on whether the accurate guessing behaviour of the subject warrants our claiming that perception is occurring. This question arises because not any state of a subject that reliably indicates a stimulus is a perceptual state. For example, to have a verruca is to be in state that reliably indicates the presence of the human papilloma virus, but it seems incorrect to think that having a verruca amounts to perceiving the virus.

3. The common-kind view and the causal theory of perception

It is widely agreed that, when you perceive, things seem a certain way to you—but that things could seem just that way when you were hallucinating. In other words, for each case of perception there is a possible case of subjectively indistinguishable hallucination. The 'common-kind' view claims that perceptual experiences and their indistinguishable hallucinatory counterparts are fundamentally the same kind of state. The experiences will both have the same phenomenal character, will represent the same thing, and be similar in their intrinsic mental properties. The experiences will only differ in factors extrinsic to the experience such as their causal origin, and whether they represent accurately. This reflects a common thought: the major purpose of ascribing experiences to subjects is to try to capture how things seem to them.

The paradigmatic form of the common-kind view is the causal theory of perception. On this theory, one perceives an object or property if and only if one has an experience that to some degree represents that object or property, and that experience is caused in an appropriate way by that object or property. How accurate the representation needs to be is a tricky issue. We want to allow that perceptual *illusions (where one perceives, but inaccurately) are possible. For example, in the Müller–Lyer illusion two lines that are the same length look unequal in length but we do not want to say that this prevents us from perceiving the lines.

The causal condition is required in order to account for *veridical hallucinations*—hallucinations that nonetheless accurately represent the world. For example, imagine that an evil scientist gives you a hallucinogenic drug that makes you have a visual experience of a starfish. At the same time, by chance, there just happens to be a starfish in front of you. The causal theory holds that such cases are not perception, as an appropriate causal connection between what is perceived and the perceptual experience is missing. Spelling out the nature of the connection is difficult because of 'deviant causal chains'. The difficulty is that, intuitively, not every causal connection suffices for perception even when the experience accurately represents that which causes the experience. Imagine that Macbeth's brain is connected to a machine, which has a touch-sensitive pad that turns it on. The machine produces in Macbeth an experience as of a dagger when it is activated. If such a dagger came to rest on the sensitive pad and activated the machine, Macbeth would not see it, despite it causing his experience. David Lewis imaginatively addresses this problem, claiming that what is required for perception is a suitable pattern of counterfactual dependence of visual experience on the scene before the eyes. Thus, Lewis would claim that because Macbeth would have continued to have the visual experience of a dagger even if it had been a claymore that had activated the machine; his experience fails to be suitably dependent on the presence of a dagger, and this explains why he does not see it. The merits of this and other responses have been widely debated.

4. Disjunctivism

Common-kind theories of perception stand in contrast to metaphysical *disjunctivism*. The main claim of metaphysical disjunctivism has sometimes been articulated as being that there is nothing in common between the experience involved in perception and that involved in an indistinguishable hallucination. That claim is too hasty when one considers that both states will seem to a subject to be indistinguishable from the experience involved in perception and both will be mental states. A more accurate articulation is that metaphysical disjunctivism claims that a state indistinguishable from perception is either a state that constitutes perception (in the 'good case') or a state involved in hallucination (in the 'bad case'), and that these states exhibit further differences which amount to the states being different 'fundamental kinds' (to use M. G. F. Martin's terminology). What are these further differences?

Some metaphysical disjunctivists claim that, in the good case, the objects and properties that one perceives partly constitute one's experience. This is not true in the bad case where nothing is perceived. Such disjunctivists not only deny the common-kind view but also deny that in perception the relevant experience is caused by the objects and properties perceived. This is because causes and effects must be distinct states and this theory denies that the experience and what is perceived are distinct.

Some metaphysical disjunctivists think that experiences involved in perception represent, but others claim that such experiences consist of a direct relation or openness to the objects and properties perceived and therefore that representation is not required. This latter view is called a *no-content view*. One can see that some rationale for it would come from holding that the perceived objects and properties partially constitute the experiences and thus that representation is otiose.

One motivation for metaphysical disjunctivism is the desire to maintain a naive or direct realism about perception. This is the view that we are directly or immediately aware of objects in perception. Another motivation is an unwillingness to assert a certain form of infallibility concerning our own minds: this view denies that if two mental states seem the same to a subject then they must be the same. A third motivation is a desire to explain how perception can ground our knowledge of the world. If hallucination and perception involve the same fundamental kind of state, but hallucination does not yield knowledge, then how can perception do so? If the experiences involved in perception and hallucination are importantly different, as the metaphysical disjunctivist would have it, then this problem might be overcome. (Epistemological disjunctivism is the view that the experiences in the good and bad cases have a different epistemic status. Although metaphysical and epistemological disjunctivism have a clear affinity, the positions are distinct and neither entails the other.)

One concern for metaphysical disjunctivism is how to account for illusion (where one sees, but inaccurately). If illusory experiences are treated like veridical perceptual experiences then the illusory aspect is unaccounted for. If they are treated like hallucinatory experiences the illusory aspect is explained but at the expense of the perceptual aspect. Disjunctivists themselves disagree about how to treat illusion.

Another concern is that metaphysical disjunctivism typically has little to say about the mental states involved in hallucination apart from the fact that they are indistinguishable from experiences involved in perception (and indeed some varieties hold that there is nothing further that can be said). This lacuna provides future work for disjunctivists.

A third concern is whether metaphysical disjunctivism can provide a better epistemology of perception than common-kind views, as some of its proponents have claimed. The view certainly does not rule out the possibility that we are hallucinating all the time. Does it show how we could come to know about the world if we do perceive? Opponents complain that it does not as, if we are perceiving, we do not know that we are (due to the indistinguishability from hallucination). The disjunctivist is liable to claim that one can know something without knowing that one knows it. In the end, the debate seems to come down to whether one thinks that in the case of perception there is something that is *available to the subject* that grounds knowledge that is not present in the hallucinatory case. The disjunctivist will affirm this, as they will say that the world is directly *available to the perceiving subject*. The opponent will deny it because the subject cannot tell by reflection alone whether the world is so available.

5. Empirically informed direct realist views

There is a view in the philosophy of perception that shares certain features with some kinds of disjunctivism: the endorsement of direct realism and the eschewing, at least to some degree, of the role of representational states. This type of view often draws heavily on empirical work in psychology and neuroscience. An early version of the view is J. J. Gibson's ecological approach. According to Gibson, there is enough information in the 'ambient optic array'—the pattern of light in space and time that directly stimulates an observer—such that the visual system of an observer need not process the direct stimulus to produce representations of the world. Perception consists, not in the forming of mental representations, but in a direct response to invariances in the optic array. These invariances include surfaces and edges in the environment and 'affordances'. Affordances are what the environment provides or invites, such as somewhere to shelter or something to eat. Gibson also stresses that how you can act—what movements you can make—will affect what affordances there are for you and therefore what you can perceive. This type of view has recently been elaborated upon with the development of dynamic or sensorimotor theories of perception. (Some *sensorimotor theories invoke mental representations but insist that having such representations requires an ability to interact knowingly with one's environment.)

The assumptions that underlie these theories are highly controversial. Both thought experiments and empirical work question whether action is necessary for perception and whether Gibson's assumptions about the ambient optic array and the working of the brain are correct. The extent to which mental representations are required in perception, and how to account for illusion and hallucination if they are not, is the subject of much contemporary debate.

6. Sense-datum theory

Returning to common-kind theories now, and to the question of how such theories characterize perceptual experience, we find that there are three main views: sense-datum, adverbial, and representational theories. These, in turn, form the subject matter of the next three sections.

Sense-datum theory was popular in the first half of the 20th century and is often attributed to earlier empiricist thinkers, such as Locke. This view endorses the following: (1) in hallucination there are no worldly objects that answer to what one seems to be aware of; (2) if it appears to one as if one is perceptually aware of an object with a certain property then there must be something that one is aware of that has that property; and (3) the common-kind view. Point (2) is supported by the phenomenal character of experience: it at least seems as if we are aware of something when we are experiencing. Sense-datum theorists conclude that, in cases of hallucination, we are aware of mental or mind-dependent objects and, due to (3), that this is true when we perceive the world too. These special objects are termed *sense-data*. They do not exist in public space and they possess any property that they appear to have.

(Note that when the term 'sense-data' was first introduced it was used to refer to the direct objects of perception, whatever they were. At that time, the discussion in the literature about perception was whether sense-data were mental objects or public objects. Many people at that time concluded that sense-data were mental objects, and so the term came to be associated with only such objects.)

Realist versions of sense-datum theory hold that we indirectly perceive the mind-independent world in virtue of directly perceiving sense-data. We can do this because sense-data resemble or represent the mind-independent world. Irrealist sense-datum theorists are either idealists, who hold that what we normally take to be physical objects are simply collections of actual sense-data, or phenomenalists, who hold that they are collections of actual and possible sense-data.

Sense-datum theories have been heavily criticized. One criticism is that there is no good reason to believe (2); hence the motivation for the view is undermined. The issue turns on whether the phenomenology of experience provides a good reason. Another criticism is that sense-data are ontologically queer mind-dependent objects—for example, they do not exist in public space but seem to have some spatial characteristics—thus they should not be countenanced. A third is that not all aspects of phenomenal character seem to be explained by positing objects and their properties. For example, what would be the nature of sense-data corresponding to experiences as of impossible figures or experiences that seem to represent something indeterminate? A fourth is that realist versions of the theory provide a circular account of perception: perception of the mind-independent world is explained in terms of perception of sense-data, which is not itself explained. A fifth is that realist sense-datum theories make a plausible account of our knowledge of the mind-independent world impossible. It is said that such views impose a Lockean 'veil of perception' between us and the mind-independent world. A sense-datum theorist might attempt to answer this charge by saying that a mind-independent world that causes us to have sense-data can be inferred as it is the best explanation of our experience, and such inference is considered to be a source of knowledge in other fields of enquiry, particularly science. Another attempt would be to hold that so long as having a perceptual experience is a reliable way of forming true beliefs about the world then it is a way of gaining knowledge.

7. Adverbialism

The sense-datum theory claims every experience involves a subject's act of awareness of some object. A number of philosophers, starting around the middle of the 20th century, wished to reject such an 'act–object' theory but, nonetheless, wished to remain common-kind theorists. Rather than holding that a subject's seeing or hallucinating redness was to be explained by a subject bearing some relation to a red sense-datum, the subject was held to be experiencing in a certain manner: in this example, redly. This view is adverbialism.

One challenge facing adverbialism is explaining complex experiences. Consider two experiences: (a) an experience as of a red circle to the left of a blue triangle and (b) one as of a red triangle to the left of a blue square. A description like 'experiencing redly and circularly and bluely and triangularly and to the leftly' does not pick out (a) rather than (b). Adverbialists have offered solutions to these problems but some have argued that any plausible solution forces the adverbialists to elaborate their theory in a way that attributes experiences with representational content and thus this shows that a plausible adverbialism is just a species of the representational view. To see this, note that one way the adverbialist could answer the challenge is to say that when one has experience (a) one experiences in a certain manner, the manner is one in which one seems to be presented with a red circle to the left of a blue triangle. This seems to be equivalent to saying that one is having an experience that represents this. (The alternative would be to think of the manner of experiencing as not essentially representational, and thus as more like sensations as construed by the traditional view and outlined in section 1.)

Adverbial views, like sense-datum views, face worries about how experiences can give rise to knowledge of the external world. The debate on this matter follows a pattern similar to that outlined above for sense-datum theories, with the exception that adverbialists sometimes claim that they are not committed to the problematic indirect view of perception that the sense-datum theorist is, as they are not committed to mental intermediaries. Whether this is any advantage is disputable.

8. Representational theories

The representational or intentional theory of perceptual experiences holds that perceptual experiences represent the world. Reasons to think that they do include: (1) experiences seem to present the world to us, (2) ascribing perceptual experiences that represent is often the best way to explain and predict the behaviour of people and animals, (3) experiences seem to have correctness conditions, that is, there is a way the world could be that would make what is represented true and a way that would make it false, and (4) experiences are similar in some respect to beliefs, which are the paradigm of representational states. If one believes that the sun is shining then the 'that' clause specifies what is represented (equivalently, specifies the content) to which we take the attitude of belief. Similarly, if one seemed to see that the sun is shining then the 'that' clause would specify the content of the perceptual experience. Of course while the subject of a belief, by definition, takes the content to be true, the subject of a perceptual experience need not do so, if, for example, they have reason to think that their senses are deceiving them.

The most common form of representational theory is that which adheres to the common-kind commitment and the causal theory of perception. On such a view, when perceiving in a non-illusory manner the experience with content will accurately represent the world and be caused in the right way by it. Unlike the sense-datum view, this view of perception of the mind-independent world holds that it is direct and occurs partly in virtue of being in a state with content. However, other versions of the representational view are possible, in particular one might think of experiences as representational states but nonetheless reject the common-kind view.

There are very many debates concerning the nature of the content of perceptual experiences. (See, CONTENTS OF CONSCIOUSNESS; EXTERNALISM; INTENTIONALITY; NON-CONCEPTUAL CONTENT; REPRESENTATIONALISM.)

Representation and phenomenal character. Representational views differ on the relationship that they believe holds between representational content and phenomenal character. Some views hold that there are some phenomenal aspects of experience that are not representational at all. Such views therefore are faced with supplementing their account of experience to explain these aspects. Some theorists become physicalist about such aspects, usually identifying them with states of the brain (see PHYSICALISM). Other theorists could treat such aspects as mental primitives that cannot be given further explanation.

Other representational theorists maintain that phenomenal character either supervenes on or is identical to the representational content of experience. This view is often called *representationalism*. (Unhelpfully, this term is sometimes used to refer more broadly to what I have been calling 'representational theories'.) It is often held not only about perceptual experiences but also about all states with phenomenal character, such as sensations and emotions. Representationalists are often motivated by their belief that experience is transparent, that is to say their belief that when we introspect we find that we are only paying attention to the seemingly mind-independent objects and properties that we are perceiving, rather than attending to other distinctive mental features of experience or any apparent non-representational properties of experience. If such a view were true, then perhaps what it is like to have an experience is exhausted by the experience's contents. It might be tempting to think that an exhaustive description of what it was like to have an experience would be an exhaustive account of the apparent worldly scene before us. However, whether any version of the *transparency claim is true and, if it is, what it shows about the mind is a topic of much recent debate. Further, there are a battery of examples in the recent literature in which, it is claimed, there are experiences that have differing phenomenal character yet the same representational content and vice versa. Examples of this kind would provide counter-examples to the representationalist's identity or supervenience claim. Whether any of these constitute successful counter-examples to representationalism is an open question.

Representationalism is often conjoined with a naturalistic theory of representation and it is hoped that a naturalistic theory of phenomenal character or consciousness will be the result. This view is hotly disputed in the current literature, with many people claiming that no naturalistic theory of representation can account for the phenomenal character of certain unusual experiences known to exist, or our intuitions about the phenomenal character of experience in various hypothetical cases.

Objections to representational theories. Returning now to consider representational views more generally, it was stated above that representational views can be conjoined with either a common-kind and causal view or a disjunctivist view. Some objections to these views are therefore simply versions of objections to common-kind and causal views or disjunctivst views, some of which have been mentioned above.

More particular objections to representational views of perception focus on what account can be given of hallucinatory states. Consider the content of a perceptual experience involved in an accurate perception of a starfish (the good case) and one involved in an indistinguishable non-veridical hallucination (the bad case). Both states would seem to represent the same thing: a starfish, or a starfish-shaped thing. Thus, it is tempting to think that the content is the very same. However, in the good case if the content is the object perceived—the starfish—then it is not obvious that that starfish is the content in the bad case, for that starfish might not exist in the bad case. Two consequences follow. First, we seem now to be denying that the content is really the same, certainly the same in all respects, in both cases. Second, we still need to say what the content is in the bad case. Some representationalists have adverted to holding that the contents of hallucinatory experiences are intentional inexistents. That is to say, the contents are objects that do not exist. However, now an account of intentional inexistents is required. If they are to be treated really as 'things' then there is the worry that the view seems to collapse into a view with as unpalatable ontological commitments as the sense-datum view. If such a view does not treat intentional inexistents in this way then the worry is that such talk is just a way of labelling the problem that in hallucination subjects appear to be confronted by objects when none are there. In this case, the problem of accounting for the *phenomenology of hallucinatory experience, in which one appears to have contact with objects, remains.

One way to get round this problem is to deny that in the good case the content is the object perceived—the starfish. Instead, one might hold that the content is an abstract object—say the proposition that a starfish is before one—and that this is the content in the bad case too. This solution is tempting, but it is resisted by some representationalists who want to give a naturalistic theory of content and who think that giving a naturalistic explanation of how the mind grasps, or stands in relation to, such an entity is problematic. Other representationalists believe that existing naturalistic theories of content can meet this challenge. Of course, if one is not motivated by naturalism, then one might happily hold that it is simply a primitive fact that experiences seem to present objects to their subjects and thus that the notions of content and of representation are not to be given further explanation.

FIONA MACPHERSON

Armstrong, D. M. (1961). *Perception and the Physical World*.

Chisholm, R. (1957). *Perceiving: A Philosophical Study*.

Crane, T. (1992). *The Contents of Experience: Essays on Perception*.

Gendler, T. S. and Hawthorne, J. (2006). *Perceptual Experience*.

Gibson, J. (1979). *The Ecological Approach to Visual Perception*.

Grice, H. P. (1965). 'The causal theory of perception'. In *Proceedings of the Aristotelian Society, Supplementary Volume*, 35.

Jackson, F. (1977). *Perception: A Representative Theory*.

Haddock, A. and Macpherson, F. (2008). *Disjunctivism: Perception, Action, Knowledge*.

Hamlyn, D. W. (1961). *Sensation and Perception: A History of the Philosophy of Perception*.

Maund, B. (2003). *Perception*.

Noë, A. (2004). *Action in Perception*.

—— and Thompson, E. (2002). *Vision and Mind: Selected Readings in the Philosophy of Perception*.

Robinson, H. (1994). *Perception*.

Smith, A. D. (2002). *The Problem of Perception*.

Tye, M. (1995). *Ten Problems of Consciousness*.

perception, unconscious Unconscious perception paradigms seek to examine the effects of sensory stimuli (typically visual) that are rendered too weak to achieve conscious representation. The idea is to eliminate possibly confounding conscious perceptual influences entirely, thereby enabling strong conclusions that obtained effects, if any, reflect purely unconscious perceptual processes. Usually, one task is used to index conscious perception (e.g. identification, which assesses the direct, intentional use of stimulus information), while another task (often *priming, wherein the unintended, indirect influence of an initial stimulus on the processing of a later stimulus is examined) is used to index unconscious perceptual effects. If successful, such paradigms could potentially reveal much about not only unconscious mental processes, but even fundamental aspects of consciousness itself. Many believe, for example, that consciousness somehow enables more complex and flexible mental processes than are possible purely unconsciously. By varying whether stimuli are unconsciously vs consciously perceived, we can empirically test such hypotheses.

For unconscious perception paradigms to serve this role, however, requires solving a deceptively simple but surprisingly tenacious methodological problem: How can we really be sure that putatively unconscious effects are not, instead, actually weakly conscious after all? Given that unconscious perception currently enjoys relatively broad acceptance, one might think that some definitive methodological breakthrough had been achieved. Unfortunately, however, this is not the case. Consequently, until these core issues are satisfactorily addressed, the currently positive consensus runs the risk of simply perpetuating the boom and bust cycle of critical acceptability that has plagued unconscious perception throughout its controversial history. Moreover, and just as importantly, careful consideration of these issues is substantively informative in its own right—raising, for example, fundamental questions about how consciousness should be indexed, how conscious and unconscious processes interact, and the role of volition. Indeed, vigorous debate on these issues continues even among unconscious perception proponents, yielding sharp disagreement on which data are valid and their appropriate interpretation.

1. How should consciousness be indexed?
2. Modern unconscious perception models
3. Concluding remarks

1. How should consciousness be indexed?

Almost everyone agrees that conscious perception covaries with stimulus intensity, typically manipulated by varying stimulus duration, masking intensity, or both. Whereas strong stimuli are plainly visible, conscious perception diminishes as stimulus strength is reduced—finally disappearing altogether when stimuli are weak enough. But exactly how should this threshold be defined? It turns out that there are two basic alternatives.