

Contemporary Problems in the Philosophy of Perception

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A "topical" review, solicited by editor Dominic Massaro, prompted by the publication of *The Contents of Experience: Essays on Perception*, edited by Tim Crane. Cambridge: Cambridge University Press, 1992. 275 pp. \$49.95

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Imagine, if you will, that the entire community of investigators interested in the problems of perception all lived together in the same town. Some continual shuffling of neighbors would be inevitable, and there might be occasional episodes of mass relocation and energetic bulldozing, but after a while the residents would probably settle down and find themselves living in districts defined roughly by disciplinary boundaries. The experimental psychologists would occupy the newer part of town, laced with superhighways, workshops and factories, machines and measuring instruments, computers and overhead display units. But the town also has an Old City, marked by the complete absence of highways and factories, where the streets are lined with ancient hovels. There are, to be sure, some colossal palaces and museums in this part of town, breathtaking monuments to the grandeur of past centuries, but the current residents lack the inclination to construct such buildings, and many of the old palaces have been boarded up and condemned as unfit for human habitation. The somewhat scraggly and irascible inhabitants of this district have few viable economic enterprises, and no free markets, but rather organize themselves in units resembling nothing so much as medieval guilds. Congratulations. You have stumbled into the neighborhood where the philosophers live.

If you are the sort who likes to stroll in strange cities, you might find it refreshing to stay for a short while and see what the residents are up to, before returning to your duties at the lab bench. This volume of essays, edited by Tim Crane, would serve well as a guide to

contemporary developments. Humans have asked questions about perception ever since the species had the eyes to see and the wits to ask. While experimental psychologists moved decisively out of the Old City more than a century ago, there is still a communality of motive and considerable overlap in the areas of concern. And, surprisingly enough, there have been developments within the philosophical community which might interest those from the more prosperous districts.

The book consists of nine essays written by philosophers, prefixed by an excellent introduction by the editor. The essays give a good sense of the range of contemporary analytic philosophy of perception. Topics include attempts to define the "immediate" object of perception, the distinction between qualitative and informational properties of experience, the structure of perceptual representation, the role of concepts, perceptual reference, sensory "fields", and the connections between perception and belief, and between perception and action. The essays are generally of high quality; experimental psychologists will find some to be more accessible than others, although the introduction will help eliminate many terminological confusions. References from all the essays were consolidated, and the single list at the end of the book provides a useful bibliography to the current literature.

Some of the questions under discussion in this volume are ancient, but show no signs of losing vigor. If knowledge rests on observation, and observation is a matter of making judgements under the pressure of sensory experience, how is it that a sensory experience can justify or fail to justify a judgement? Judgements are invariably cast in a language, while sensory experiences have causes which are exclusively non-psychological; so how can any logic mediate the connection, so that one sometimes justifies the other? Often the judgements are at surprising remove from raw experience, as when one hears a clatter through the window and so judges that a horse-drawn coach is passing over the cobblestones. In such cases we say that we hear the coach, but such hearing is mediated by learning and inference; and so one naturally asks what it is in that situation that might function as the premise of such inferences, or, less fancifully, what it is that one hears directly, without mediation. It seems that the "immediate object" of auditory experience cannot be the coach, but is rather the sound made by the coach. But what then are sounds? Can compressional waves in the air serve as the immediate objects of perception, or must one continue moving along the causal chain until one reaches sensations in the mind? Thinking about such questions will not help you to perform better experiments, but such questions once raised have an irritating persistence. One senses that even if and when a psychological theory of

audition is complete, it will not answer such questions, but at best will have implications on classes of possible answers that only the most delicate of logical investigations will succeed in delineating. Some vigorous and impatient investigators will undoubtedly declare that if the experimental method cannot itself definitively resolve such questions, then it is the questions that are at fault: they are meaningless, empty, or malformed. While this thesis was once also popular within philosophical circles, intensive discussion over several generations has shown that accepting it would have the unfortunate consequence of rendering almost any definition of a theoretical term meaningless, empty, and malformed as well. The attempts to rezone the districts linguistically have failed; the philosophical questions are of a piece with high-level theoretical ones, and no clear boundary line can be drawn between the two.

The first essay of the book ("The puzzle of experience" by J. J. Valberg) provides a good example of how philosophical questions about perception arise. Valberg points out that investigation has already established at least the rough outlines of the causal processes operative in visual perception:

We know (roughly) that light is reflected from physical objects and travels in straight lines; that it impinges on the eye and produces an image on the retina; that this excites the optic nerve; that a 'message' travels from the optic nerve to the visual cortex of the brain; and that finally, as the upshot of this chain of events, visual experience occurs. (p. 24).

This "causal picture" is by no means the last word, but even in this simple form it suffices to launch an antinomy. First, if there is a causal chain of any such sort, then experience is directly sensitive only to the latter links, so that "If the activity in my brain were to continue as it is, my experience would continue as it is" (p. 25). The physical object in front of the eyes is then potentially irrelevant to the character of the experience. That object might cease to exist while brain activity and visual experience continue. If this is logically possible, then the object one experiences when one looks at a book cannot be identical with a physical object in front of the eyes. The latter might cease to exist while the former continues unperturbed.

Valberg calls this chain of reasoning "problematic" because its conclusion--that the objects that we experience in perception are not physical objects--is so contrary to common sense. But it takes little to launch the problem, and it is hard to see how further empirical investigation would yield some brake to its getting underway. Indeed, adding further details to the causal picture in some ways only

exacerbates the issue. The second half of the antinomy arises when one forgets the problematic reasoning, and, as Valberg puts it, allows oneself to be "open to one's experience". When one does this, the only object one finds in the scene is the book itself. There is no other object present. One seems to see physical things out there in front of one's eyes; the objects of experience do not *seem* to be occupants of some internal cinema. Experience itself appears to contradict the conclusions derived from any causal account of perceptual experience.

The conclusion of the problematic reasoning endorses what philosophers call a "sense datum" or "causal representative" theory of perception; being open to one's experience yields "naive realism". These two have long been on the stage and at loggerheads.

Sensory states and sense data

The idea of a "direct" or "immediate" object of perception can be formulated in various non-equivalent ways.

- 1 When it is true that we see, touch, or hear something, what are the things seen, touched, or heard?
- 2 Perception is affiliated with awareness; perceptual episodes make one aware of things. What are the objects of which perception makes one directly aware?
- 3 Perception yields judgements, some of which rest on doubtful inferences. Presumably it also provides some evidential premises, which, if couched carefully enough, could not be doubted. What is that evidence?

There are natural and historically powerful reasons for answering all three questions in the same way: by naming objects or states internal to the mind known as "impressions", "sensations", or "sense data". Valberg's problematic reasoning suggests that the objects manifest in perceptual experience are not, as they seem to be, physical objects, but are rather constructs, dependent on brain activity, which can persist even if those distal stimuli vanish. It then becomes natural to think that perceptual consciousness is filled with such mental objects, and that, since they are interior to consciousness, they provide all the evidence in a perceptual episode which is indubitable.

Consider, for example, the following classic description by H. H. Price:

When I see a tomato there is much that I can doubt. I can doubt whether it is a tomato that I am seeing, and not a cleverly painted piece

of wax. I can doubt whether there is any material thing there at all. Perhaps what I took to be a tomato was really a reflection; perhaps I am even the victim of some hallucination. One thing however I cannot doubt: that there exists a red patch of a round and somewhat bulgy shape, standing out from a background of other colour-patches, and having a certain visual depth, and that this whole field of colour is directly present to my consciousness. (Price 1932, p. 3).

The red bulgy expanse is a "sense datum". Price goes on to urge that one's awareness of it is direct, unmediated by any inference or "any passage from sign to significate". For this reason such items have also been called the "direct objects" of experience. While looking at the tomato one cannot doubt that the red bulgy expanse exists, although one can have considerable doubts over whether that item is a physical item identical to something in front of the eyes; whether it exists when one ceases to look; or whether other people can be conscious of the very same item. Indeed, Frank Jackson (1977) has argued that the redness of such red bulgy expanses cannot be identified with any physical property of objects in front of the eyes, and therefore that the direct objects of perception are always mental entities.

How are we to handle such items as red bulgy expanses? How might they fit into an emerging scientific account of visual processes? (see Sellars 1971, 1981). Undoubtedly some of the thinking which leads to the description of sense data is confused, and some of these questions can be shown to rest on confusions, and so dissolved, rather than solved. But surely experimental psychology owes us some account of how its theories could explain the ordinary experience of looking at a tomato. Could the red bulgy expanse be identified with some visual representation, which in turn is identified with some brain process? Or should we deny Jackson's argument, and show that the redness and the bulgy shape can both be identified with physical properties of objects in front of the eyes? In the latter case (argued in Armstrong 1968, 1980), the red bulgy expanse is not construed as a representation flitting about in one's mind, but is instead a physical entity in front of the eyes. Both options seem to have obvious problems. If the redness and bulginess of the expanse are ultimately analyzed as aspects of a visual representation, how is it that they seem to be located out in front of the eyes? On the other hand, if they are physical properties in front of the eyes, how is it possible that one become directly aware of them--given the intricate causal processes intervening between quantum catches at the receptors and the eventual visual experiences?

Many of the issues actively under discussion today have roots in sense-data theory. For example, what are the conditions necessary and sufficient for us to say that a subject *sees* something? In "Visual

experience and its objects", E. J. Lowe proposes that a subject *sees* an object if and only if that object causes visual experiences in the subject, some properties of which suffice to allow the subject to make a reliable judgement of the object. On this account, experiences have "qualitative character" in virtue of which the objects which cause them present different appearances. Objects are *seen* if they cause the right kind of experiences. Visual experiences can be differentiated from others purely on the basis of such qualitative character.

The paper by Paul Snowdon, "How to interpret 'direct perception'", analyses the notion of "direct" or "immediate" objects of experience. Considerable work in philosophy recently has focused on the role of demonstratives and indexicals in thought, much of it showing obvious debts to the work of Gareth Evans (1982). Indexicals crop up everywhere from accounts of natural kinds to the nature of self awareness. Snowdon makes good use of the recent developments by suggesting that the "direct" objects of perception are just those which the subject could demonstratively identify in virtue of having that perception. Directness becomes a function of the capacity to execute an indexical. This replaces the epistemological criterion, and yields an incisive analysis of various traditional arguments for sense-data.

Qualities and the adverbial approach

According to classic accounts of sense data, if you see a red tomato, you see it in virtue of becoming directly aware of a mental item--the sense datum--which is literally red, has a bulgy shape, and so on. What you see are sense data, and they really do have the properties which objects often appear to have. These different properties of sense data are "qualitative" properties. There has been quite a debate within contemporary philosophy about the qualitative characteristics of mental states, focusing largely on color vision (Hilbert 1987, Westphal 1987, Hardin 1988, Landesman 1989, Clark 1993).

The modern move in these debates is to construe sensation as a species of representation. What it takes to see a red tomato is the engendering of a visual representation *of* a red tomato. You do not literally see your visual representation; you *have* it (or live through it), and in virtue of having it represent the world as containing a red tomato. Similarly, the representation itself need not be red or bulgy, as long as it represents the object in front of the eyes as being red and bulgy. The red bulgy tomato is out there in front of the eyes, represented by a mental state firmly in the brain.

On this line the various "phenomenal" or "qualitative" properties of

sense data are analyzed instead as modes of representing objects. The representation need not itself be red, anymore that the word "red" need be red. The apparent redness is construed as a manner of representing objects. Thoroughgoing pursuit of this line is likely to land you in what has been called the "adverbial" approach to experience, typified in this collection by an excellent article by Michael Tye entitled "Visual qualia and visual content". The approach is "adverbial" because it treats what were thought to be properties of mental objects as manners of representing (or sensing). So the underlying logical form for "the tomato looks red" is "I sense the tomato redly". Redliness characterizes the way in which I sense the tomato.

Tye's point in his paper is to argue that a representational account can handle everything once attributed to phenomenal or qualitative properties. So if visual experiences are representations, then there are no good reasons to give them qualitative properties over and above their representational ones. This is still quite a controversial thesis amongst the philosophers, and there are many intriguing arguments and thought-experiments on both sides of the issue that would interest psychologists as well.

The structure of perceptual representation

It soon becomes evident that many of the battles over topics in the philosophy of perception are part of a much larger war which has been simmering in the Old City for years. That larger war is over the very nature of mental representation. This has sucked in materiel and combatants from many different regions. Much of the business of a conscious mind is a matter of representation; but is that all it does? Is the savoring of a sensory experience nothing but the representing of a state of affairs? The account proffered above describes visual experience as a species of representation, but this settles few questions. How is representation even possible--how is it possible that a state of affairs in a brain on a mountain summit can manage to refer to and characterize a state of affairs in a remote but visible village? What gives some states of the visual system this power and others not?

Along with Tye's paper, two others in this collection are centrally concerned with the nature of perceptual representation. One driving question is: if a system of states is to be a system of representation, must it be organized along the lines of a language? Must it have names and predicates, concepts and objects, contents and truth values? Our paradigm example of successful representation is language, and it is the best understood. Here the philosophical debt derives largely from

Frege, whose accounts of sense and reference, concepts and meaning, identity and truth, all set the terms for the discussion continuing today (see Geach and Black 1985). That discussion is fueled by the worry that perhaps a system of states is not strictly a system of *representation* unless that system contains something recognizable as concepts, names, predicates, and so on: the paraphernalia of a full-blown language.

Christopher Peacocke has been prolific in writing about these questions (see Peacocke 1983, 1986, 1989), and in "Scenarios, concepts, and perception" he addresses these worries directly. He argues that perceptual experience is a kind of representation which differs radically from the Fregean norm. Instead of sequence of linguistic terms, a perceptual representation proceeds in terms of *scenarios*: ways of filling out the space around the perceiver. For each identifiable point in that space we

specify whether there is a surface there, and if so what texture, hue, saturation, brightness, and temperature it has at that point, together with its degree of solidity. The orientation of the surface must also be included. So must much more in the visual case: the direction, intensity, and character of light sources; the rate of change of perceptible properties, including location; indeed it should include second differentials with respect to time where these prove to be perceptible. (p. 107).

The "space" comprising such points is an egocentric space; the points are to be identified by relations to the perceiver's body, or, as Peacocke puts it, by relations to axes whose labelling mentions bodily parts.

The central claim is that this is a system of representation which proceeds without concepts. The representation is correct if the space around the perceiver is in fact occupied by surfaces and features in the way represented. The "content" of such a representation is the set of ways of filling out that space consistent with the representation. This content will typically be finer-grained than are the concepts possessed by the subject. For example, no description can capture all the particular details you might see in the texture of a wood table. One lacks the concepts to describe the particular shapes and relations of grain lines and burls. So visual experience can represent without employing concepts. Similarly, Peacocke argues that Fregean conditions for distinguishing different "senses" will not suffice to distinguish different modes of sensory presentation. To account for the facts of shape perception, Peacocke proposes a second level of non-conceptual contents which he calls "proto-propositions". These are properties and relations among items in egocentric space such as "square, curved, parallel to, equidistant from, same shape as, and

symmetrical about" (p. 120). Peacocke argues that such properties and relations are part of the content of the experience, but (because a shape can be perceived even though one lacks the concept to describe it), those contents are non-conceptual.

Tim Crane's paper, entitled "The non-conceptual content of experience", further clarifies the possibilities for non-conceptual representation. To do this one must delineate the differences between systems of representation that employ concepts and those that do not. Crane offers the interesting suggestion, based on an idea expressed in a letter from Frege to Peano in 1896, that a system of representation (or a system of "intentional states") employs concepts if and only if it is composed of constituents that play a particular role in *inferences*. Mere representation of states of affairs could proceed by unstructured contents, but if a thinker is able to make inferences from one content to another, there must be structural elements in those contents to mediate such inferences. Those elements are concepts:

concepts are the *inferentially relevant constituents of intentional states*. . . . The elements in a thinker's network of intentional states are essentially inferentially related to one another. Concepts are the constituents required to explain these inferential relations. (p. 147)

Crane then argues that since "there is no such thing as deductive inference *between* perceptions" (p. 152), perceptual representation, while it has structure, lacks inferential structure, and so is non-conceptual. Inferences arise only when perceptions have been conceptualized, yielding beliefs. This discussion picks up themes explored by Dretske (1981) and Fodor (1983). Crane is aware of the venerable theories postulating "unconscious inference" within perceptual systems, and of contemporary versions, in which computations in effect "deduce" solutions (for depth, surface orientation, or motion, for example) from perceptual data structures. He argues that these capacities do not yield anything equivalent to the inferential relations among beliefs, since they have a delimited, relatively rigid, and perhaps hard-wired scope. The visual system may carry out computations in accord with the laws of optics, but it cannot represent other laws, or draw any but the built-in consequences. It lacks the inferential plasticity that signals conceptual endowment.

Spatial reference and sense fields

Any system of representation has both referential and attributive functions: it identifies some objects and says something about them. Perceptual representation may not need to employ concepts or predicates, but it must somehow establish *reference*. The system must

latch onto and identify the objects whereof it "speaks". Peacocke's scenarios would be of no use unless one could establish *which* point is being characterized as having such and such a hue. So how can a system of perceptual representation achieve reference? The problem is related to the earlier difficulty of identifying the immediate objects of perception. Price describes his bulgy red expanse as "standing out from a background of other colour-patches, and having a certain visual depth" and he says that "this whole field of colour is directly present to my consciousness". What is the status of this "whole field of colour"? How are we to make sense of the spatial character of perceptual experience?

Relying on the Archimedean principle that just one thing can occupy a given place at a given time, perceptual systems typically establish reference by identifying places. They pick out an item by picking out its place; and then characterize some properties or features of happenings at that place. Questions about the referential functions of perceptual experience hence merge with questions about how we perceive space. These have been part of the psychological and philosophical tradition dating back to Berkeley and his worries about visual depth, and to Lotse and "local signs". More recent influences obvious in this collection include some of the authors on indexicals already mentioned, and David Marr's work on vision (1982).

Thomas Baldwin attacks these questions in a direct and ambitious way in "The projective theory of sensory content". He argues that visual experiences refer to things, and that "there is an intrinsic spatial articulation of the visual field, and other sensory fields, which is not simply borrowed from the spatial structure of their normal causes" (p. 183). Our visual representations present various qualities, and we visually represent the locations of the causes of our experience. This "apparent location" of the qualitative properties of experience is what Baldwin calls "projection". Baldwin argues, along lines first suggested by Locke, that in fact those qualities are *not* located out there in front of the sense organs. Suppose that the final resting place for red is as a mode of visual representing: we sense the tomato redly. That we still seem to see red as spread out over the surfaces of things in front of the eyes is then a regrettable illusion (see also Hardin 1988). The argument is bolstered by examples showing that the locations apparently identified by an experience are not always the locations of the distal causes of the experience.

Michael Martin's "Sight and touch" usefully describes some of the structural differences between the perception of space in vision and in touch. According to Martin, both bodily sensations and visual

sensations have apparent locations: you sense the pain in your hand, and see the tomato on the table in front of you. But the two spaces differ in structure. You sense spatial relations between your two hands in terms of an enveloping space which extends beyond tactile and kinesthetic bodily boundaries. One can sense empty space between those hands in which no bodily sensation is felt. Whereas the space of the visual field has no unoccupied places; it simultaneously contains all and only the objects seen. Visual space, unlike haptic space, is part of (or just a matter of relations within) visual experience itself. If Martin is correct, then we should not expect that the same account of how places are identified in vision will work for other modalities such as touch or audition. It may be that the visual way of establishing identifying reference is distinct from the tactile way. More broadly, one could imagine that different sensory modalities systems of representation that proceed on different principles.

This sort of concern is evident in the last paper in the book, by Brian O'Shaughnessy: "The diversity and unity of action and perception." Traditionally one thinks of perception as a passive phenomenon: data impress themselves on the senses. While "New Look" theories of perception have long since abandoned that view in psychology, O'Shaughnessy argues that in fact there is a conceptual connection between perception and action. His stalking horse is audition, and particularly the phenomenon of *listening*, which he argues has a structure which cannot be assimilated either to that of a passive effect of external sounds, or to that of an action under the control of an agent. Listening has aspects of both, and so explodes the dichotomy.

At the end one hopes that the empirical study of perceptual processes will be invigorated and refreshed by such forays into philosophy. Aspects of the adventure will prove alien; experimental psychologists will be particularly surprised and irritated by the tendency of philosophers to disregard empirical details, lump together entire classes of possible theories, and proceed blithely to discuss the consequences and implications of one entire class compared to others. So we find Valberg discussing the implications of accepting *any* theory of perception consistent with a "causal picture" which is drawn in very broad strokes; and Baldwin confidently categorizing all prior theories of spatial perception into three rather large classes (representative, adverbial, and informational), and arguing that none of them succeed. Such discussion may seem to presume that empirical inquiry has already successfully concluded, and this will undoubtedly irritate any person earnestly engaged in trying empirically to weigh one particular theory against another. In its defense one can only say that

psychological theories do after all have larger implications about the mind, human experience, and human knowledge, and it does no harm every so often to lift one's eyes to the wider horizons. Young philosophers are attracted into the subject for the same reasons that attract young psychologists, but they get stuck worrying about some of the conceptual implications of sentences in introductory textbooks, and proceed no further into the empirical details. Even this latter habit is slowly undergoing extinction; compared to a volume of essays on similar subjects published about twenty years ago (Sibley 1971) this volume shows a far greater appreciation of the psychological literature, and the work of David Marr, Gibson, information theorists, neuropsychologists, and neurophysiologists are all brought into play. They say that good fences make good neighbors, but in this domain there are none but arbitrary grounds on which to fix the boundary lines, and the maxim itself is open to doubt.

References

- Armstrong, D. M. (1968). *A Materialist Theory of the Mind*. London: Routledge & Kegan Paul.
- Armstrong, D. M. (1980). *The Nature of Mind and Other Essays*. Ithaca: Cornell University Press.
- Clark, Austen. (1993). *Sensory Qualities*. Oxford: Clarendon Press.
- Dretske, Fred I. (1981). *Knowledge and the Flow of Information*. Cambridge, Mass: MIT Press.
- Evans, Gareth. (1982). *The Varieties of Reference*. Edited by John McDowell. Oxford: Clarendon Press.
- Fodor, Jerry A. (1983). *The Modularity of Mind*. Cambridge, Mass.: MIT Press.
- Geach, Peter and Black, Max (eds). (1985). *Translations from the Writings of Gottlob Frege*. 3rd edition. Oxford: Basil Blackwell.
- Hardin, C. L. (1988). *Color for Philosophers*. Indianapolis: Hackett.
- Hilbert, David R. (1987). *Color and Color Perception: A Study in Anthropocentric Realism*. Stanford, Cal.: Center for the Study of Language and Information.

- Jackson, Frank. (1977a). *Perception: A Representative Theory*. Cambridge: Cambridge University Press.
- Landesman, Charles (1989), *Color and Consciousness*. Philadelphia: Temple University Press.
- Marr, David. (1982). *Vision*. San Francisco: W. H. Freeman.
- Peacocke, Christopher. (1983). *Sense and Content: Experience, Thought, and their Relations*. Oxford: Clarendon Press.
- Peacocke, Christopher. (1986). *Thoughts: An Essay on Content*. Oxford: Basil Blackwell.
- Peacocke, Christopher. (1989). Perceptual content. In J. Almog, J. Perry, and H. Wettstein (eds.), *Themes from Kaplan*. Oxford: Oxford University Press, 297-329.
- Price, H. H. (1932). *Perception*. London: Methuen & Co. Ltd.
- Sellars, Wilfrid. (1971). Science, sense impressions and sensa: a reply to Cornman. *Review of Metaphysics* 23: 391-447.
- Sellars, Wilfrid. (1981). Is consciousness physical? *The Monist*, 64: 66-90.
- Sibley, F. (ed.). (1971). *Perception: A Symposium*. London: Macmillan.
- Westphal, Jonathan (1984), *Colour: Some Philosophical Problems from Wittgenstein*. Oxford: Basil Blackwell.