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The Myth of Color Sensations, or How Not to See a Yellow Banana

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Abstract

I argue against a class of philosophical views of color perception, especially insofar as such views posit the existence of color sensations. I argue against the need to posit such nonconceptual mental intermediaries between the stimulus and the eventual conceptualized perceptual judgment. Central to my arguments are considerations of certain color illusions. Such illusions are best explained by reference to high-level, conceptualized knowledge concerning, for example, object identity, likely lighting conditions, and material composition of the distal stimulus. Such explanations obviate the need to appeal to nonconceptual mental links in the causal chains eventuating in conceptualized color discriminations.

Keywords: Color vision; Philosophy of perception; Color; Sensations; Nonconceptual content; Conceptualism; Consciousness

1. Introduction

My aim here is to cast doubt on the view that there are any such things as color sensations. Though I don't have firm numbers, it seems safe to say that denying color sensations goes against the majority of contemporary philosophers of mind. Two sorts of philosophers populate this majority: first-personalists and third-personalists. The first-personalists allege that their basis for believing in color sensations is largely, perhaps even

wholly, first personal. They peer inside their minds and find color sensations, items that are, perhaps more than anything, beyond serious doubt. For instance, Chalmers (1996, pp. xii–xiii) upon finding himself “absorbed in an orange sensation” discovers something whose existence “we are surer of . . . than we are of anything else in the world.” I’ll largely set aside the first-personalists in the present paper and concentrate on the third-personalists. The third-personalist subset of the majority holds that, besides whatever they think introspection delivers, there are good reasons accessible from the third-person point of view for believing in the existence of sensations. The third-personalists I’ll primarily have in mind are Wilfrid Sellars¹ and his many contemporary followers on this issue.²

Besides “sensations,” other labels considered roughly synonymous include, but are not limited to, “raw feels,” “impressions,” and “qualia.” Dennett (1988) famously tried to quine³ qualia, but the present project differs importantly from Dennett’s. Dennett targets qualia conceived of as items alleged to be (a) ineffable, (b) intrinsic, (c) private, and (d) directly known. Dennett’s targets are much dearer to the first-personalists. I’ll be instead attempting to quine entities that need not satisfy any of the four items in Dennett’s definition. My tentative list of features of the sensations I oppose are those alleged mental states that are (a) third-person posited, (b) nonconceptual but mental, (c) causal antecedents of perceptions in virtue of which, (d) we perceptually discriminate colors (or perceptually discriminate objects with respect to color), and (e) visually (as opposed to, e.g., tactually) sense spatial properties. Whether the sorts of considerations against color sensations I present here can be generalized to all sensations is not an issue I will pursue in the present paper.

Before saying more about how the rest of the paper will proceed and then proceeding with it, here’s a quick flavor of the sort of thing to come in the rest of the paper. Suppose I see that there’s a banana on the table before me. I don’t merely *think* that there’s a banana on the table before me, as I might were my eyes closed and I had it on the testimony of a good friend or my own memory that there’s a banana there beyond my closed eyelids. I am, suppose, right now *seeing* that there’s a banana on the table before me. There’s an old-fashioned explanation of what’s going on here, an explanation of a sort that I’ll be opposing in the present paper. The explanation is old fashioned in that we can trace it back beyond Sellars’s followers and Sellars and then to Berkeley and Aristotle, among others. Anyway, the old-fashioned explanation is this: My seeing that there’s a banana depends on my seeing this object as having a certain shape, one that’s diagnostic of fruits of that type, and the seeing of the shape itself depends on something, namely, seeing color differences between figure and ground (otherwise the banana would be invisible to me by its perfect camouflage), which itself depends on my having color sensations, one of which we can call mental-yellow or yellow* (pronounced “yellow star”), to remind ourselves that whereas bananas are literally yellow, sensations are not. And here’s a flavor of one of several reasons why I think this old-fashioned explanation is wrong: There has to be some causal process that starts with a yellow banana and eventuates in an instantiation of a yellow* sensation. And, in order for the old-fashioned explanation to be true, it better not turn out that causal intermediaries between the banana and the sensation include conceptualizations (e.g., of bananas) and sensings of spatial properties (e.g.,

of curved oblongs) because what's distinctive of the old-fashioned explanation is that those things are supposed to come *after*, not before, the mental tokening of something yellow*. However, this thing that better not turn out to be true does turn out to be true. Surprising as it may sound, there's scientific evidence that the colors objects visually appear to have depends (sometimes and perhaps all the time) on their visual shape and what categories the seen objects are seen as belonging to. So the old-fashioned explanation is no good, and thus neither is the third-personalist belief in color sensations that depends on it.

The rest of the paper will proceed as follows: In Section 2, I'll sketch the key features of the Sellarsian account of color sensations. In Section 3, I'll present my case against the existence of any such sensations. In the concluding Section 4, I'll make some brief remarks of where the philosophy of color consciousness can go from here.

2. The Sellarsian story about color sensations

The approach to sensations that I'm focusing on in the present paper is one due to Sellars (1963, 1965a,b, 1975, 1977, 1997) and developed by Rosenthal (2005, 2010). In a single sentence, this Sellarsian or Sellarsian-Rosenthalian view is that color sensations are (a) the third-person posited, (b) nonconceptual but mental, (c) causal antecedents of perceptions in virtue of which (d) we perceptually discriminate colors (or perceptually discriminate objects with respect to color) and (e) visually (as opposed to, e.g., tactually) sense spatial properties. The following five subsections further spell out these five component ideas.

2.1. *Third-personal posits conjured to play certain causal explanatory roles*

Among Sellars's most notable legacies to the philosophy of mind is his articulation of the view that mental states—thoughts and sensations—are theoretical posits no less so than the unobservable posits central to the atomic theory of matter (Sellars, 1965a, b, 1997). That the basis for such posits is supposed to be third-person accessible is forcefully conveyed by Sellars's famous myth of Jones, wherein a hypothetical group of our ancestors—the Ryleans—make the transition from a strictly behaviorist vocabulary by positing thoughts and sensations to explain certain outwardly observable human behaviors (1997). There are several things that color sensations are posited to explain. One is that color sensations are posited to explain the difference between *seeing*, for instance, a banana as yellow and merely *thinking*, as one might do without seeing anything at the moment, that a banana is yellow (Rosenthal, 2005, p. 219; Sellars, 1975, pp. 306–307). A second thing that color sensations are posited to explain is what, besides the propositional content that there is a yellow banana over there, is common to situations in which (a) one sees that there is a yellow banana over there (“seeing,” being a success verb, is properly applied here only when there is in fact a yellow banana), (b) it looks to one as if the banana over there is yellow (when in actuality, the banana is some other color), and (c) it

looks to one as if there is a yellow banana over there when in actuality nothing over there is either a banana or yellow (Sellars, 1997, pp. 85, 108–109, 116, 1965a, pp. 437–438). A third thing that color sensations are posited to explain is how we are able to make certain perceptual discriminations. I will say more about this in Section 2.4. A fourth thing that color sensations are posited to explain is how we can visually sense the spatial properties of objects such as their shapes and sizes. I will say more about this in Section 2.5.

2.2. *Nonconceptual but mental*

In thinking or believing that there is a yellow banana over there, one exercises certain concepts, in particular one's concept of yellow and one's concept of a banana. One's exercise of such concepts in thinking and believing enables one to have (or constitutes the having of) states with propositional contents such as that there is a yellow banana over there. One way of putting the point that color sensations are something mental over and above the propositional contents is to say that sensations are, though mental, "non-conceptual" (Sellars, 1997, pp. 54–57, 1965a, p. 436; Sellars, 1967, pp. 16–17; 1965b, p. 185; Rosenthal, 2005, pp. 214–215; Coates, 2007, p. 10). Insofar as the Sellars-Rosenthal account views sensations as a species of mental representation (Rosenthal, 2005, pp. 208, 222), the account is a member of a large collection of views advocating the existence of nonconceptual content.⁴ A common way of characterizing nonconceptual content in the literature is as "content, the possession of which may be had without possessing the concepts that would be required in order either to say what the content is, or express in a language a thought concerning such a content" (Mandik, 2010, p. 82). Rosenthal (2005, p. 215) allows for the possibility of sensations occurring in organisms that lack conceptual capacities. In advocating the view that sensory consciousness has nonconceptual content, the Sellars-Rosenthal view thus opposes conceptualism, the view that

... conscious perceptual states have conceptual content, and the mental aspects distinguishing various perceptual states, aspects such as the phenomenal character or sensory qualities of the states, are exhausted by these conceptual contents. Focusing on conscious experience of color, ... the difference between a conscious experience of red and a conscious experience of blue just is the difference constituted by deploying the concept of red in the one experience and the concept of blue in the other. (Mandik, 2012a, p. 620)

2.3. *Sensings come before conceptualizations*

In seeing that there is a yellow banana over there, I have states, one of which has conceptual content pertaining to yellowness and bananas. However, the occurrence of a non-conceptual item—a sensation—is crucial to the Sellars-Rosenthal account of what distinguishes this seeing from a mere thinking. But it is not enough, on this account, that

there simply be an approximate co-occurrence of a conceptualization (a state with conceptual content) and a sensation. On this account, the sensation is, as Sellars (1977, p. 182) puts it, “the immediate cause” of the conceptualization and as Rosenthal (2005, pp. 214–215) makes essentially the same point, sensations (states without conceptual content) “occur relatively early in the stream of mental processing that leads to full-fledged perceptions ... states with conceptual content.” There is perhaps room for disagreement here between Sellars and Rosenthal, for Sellars states that the sensation is the “immediate” cause of the conceptual state where Rosenthal commits only to the sensation being earlier in the processing stream and thus may perhaps allow for some causal mediation between the sensation and the conceptual state. Nonetheless, what Sellars and Rosenthal have in common here is a view that the sensation and the conceptual state are causally linked and that the sensation comes earlier in the relevant causal chain.⁵

2.4. Sensational qualities points in a space defined by perceptual discriminations

Like most contemporary accounts of color perception, the Sellars-Rosenthal account rejects the Aristotelian view that color sensations literally take on the same colors and shapes as the objects that they are sensations of (*De Anima*, Book III part 2). Despite the rejections of a first-order resemblance between sensations and their objects (those external-world items they are sensations of), the Sellars-Rosenthal account maintains that there is a second-order resemblance between sensations and objects: Sensations exhibit a set of similarities and differences that are homomorphic or structurally similar to the perceptible similarities and differences in their objects (Sellars, 1997, pp. 111–112; Rosenthal, 2005, pp. 10–14). For two colors that a creature is able to perceptually discriminate—for illustration’s sake, say, yellow₂₂ and yellow₂₃—the creature is able to discriminate those colors in virtue of having sensations with distinct mental qualities yellow₂₂* and yellow₂₃* (Rosenthal, 2005, pp. 202–204). An external object such as a banana can be literally yellow₂₂, but cannot be literally yellow₂₂*, and a color sensation can be literally yellow₂₂*, but not literally yellow₂₂. Sensations cannot have the colors that objects have because sensations are states of persons and states cannot have colors (a person is an object in the sense of “object” relevant here) (Rosenthal, 2005, pp. 196–197; Sellars, 1997, p. 47). One of the crucial ideas of the Sellars-Rosenthal account of sensations that I’ll be targeting in my criticisms in Section 3 is that, as Rosenthal (2010, p. 374) puts the point, “mental qualities are the properties in virtue of which we make perceptual discriminations” (see also Rosenthal, 2005, pp. 11, 202). This commits the Sellars-Rosenthal account to the following view about the explanatory order of sensations and perceptual discriminations: Perceptual discriminations are made in virtue of distinct sensations, sensations with distinct mental qualities. I presume the phrase “in virtue of” here to denote a causal or explanatory relation and thus commit the view to a certain asymmetry—perceptual discriminations are explained in terms of sensations, and not the other way around. This asymmetry in the explanation of perceptual discrimination fits well with the causal relations I remarked upon in Section 2.3., wherein sensations are causal antecedents of perceptual states.

2.5. Visuo-spatial sensing depends on color sensing

Another component of the Sellars-Rosenthal account of sensations that I'll be targeting in Section 3 is that visuo-spatial sensing depends on color sensing. It is an old idea in philosophy that what's distinctive of vision among the sensory modalities is its sensitivity to color (Aristotle, *De Anima*, Book II part 6). A sensing of the spatial properties of an object that did not involve sensing the object's color would not be a visual sensing but would instead be the operation of some other sensory modality, for example a tactile sense. Since we are able to visually discriminate objects with respect to their spatial properties such as size and shape, and sensations are posited on the Sellars-Rosenthal account to explain perceptual discriminative capacities, there are sensations with spatial mental qualities such as shape* (Rosenthal, 2005, pp. 215, 219–222). Furthermore, visuo-spatial sensing depends on color sensing. According to Rosenthal “[s]patial mental qualities of shape and size are determined in each modality by the mental boundaries among the content qualities characteristic of that modality, color for vision, pressure and resistance for touch, and so forth” (2005, p. 199) (see also Rosenthal, 2010, p. 378). Sellars similarly endorses a tight connection between color sensing and visuo-spatial sensing (and further connects the view to Berkeley's rejection of Locke's distinction between primary and secondary qualities [Sellars, 1963 fn. on p. 75; 1965b, pp. 190–191]).

The key point here has a high degree of intuitive appeal. Intuitively, if I see a figure against some ground, it must be due to some differences in color—differences in hue or shade—between the figure and the ground. If, instead, I could sense absolutely no color differences between the figure and its background, then the figure would be perfectly camouflaged and thus invisible, at least to my eye. Note the asymmetry introduced here. In seeing a yellow banana against a background of a red table cloth, I do not sense the banana's color by sensing the banana's distinctive oblong shape. Instead, I sense the shape by sensing the banana's color as well as the color of the tablecloth.

3. Color vision without color sensations

In Section 3.1, I describe some interesting color illusions. In Section 3.2, I use these illusions as the basis for posing a dilemma for the sensation story.

3.1. Some color illusions

There are many examples in which the apparent color of a region of a picture is influenced by the shapes, categorial object identities, probable illuminants, and/or probable material compositions of the objects depicted in the pictures. (See, for example) Adelson, 1993; Hansen, Olkkonen, Walter, & Gegenfurtner, 2006; Knill & Kersten, 1991; Lotto & Purves, 2002; Olkkonen, Hansen, & Gegenfurtner, 2008; Purves, Wojtach, & Lotto, 2011; and Witzel, Valkova, Hansen, & Gegenfurtner, 2011.) The pictures I am talking about here are not pictures in the mind, but pictures that you would show on a computer

screen to an experimental subject in a lab. Or to yourself if you wanted to search the Web and see some of what I am talking about. It will be useful and interesting to work briefly through a few examples.

Treat yourself to an Internet search for “checker shadow illusion” to see a particularly famous version of what I want to spend some time here puzzling over (alternately, you can go straight to the source—see Adelson, 1995). You will know that you have found the right image if you find a picture of a green cylinder casting a shadow across the checkerboard that it is sitting upon. Being a checkerboard, the cylinder’s support is composed of a tessellation of light-dark alternating rectilinear regions. One of the “dark” regions (scare quotes to be explained in just a moment) is labeled A, and it falls outside of the cylinder’s shadow. One of the “light” regions is labeled B, and it is in the shadow. And here is the illusion part of the checkerboard illusion: The regions of the picture depicting A and B, respectively, are the same shade of gray. Thus, the scare quotes: the “light” region is not actually lighter than the “dark” region and the “dark” region is not actually darker than the “light” region. Thus, also it is safe to presume that the light hitting the eye from A is of the same frequency and intensity as the light hitting the eye from B. So any appearance of a difference between A and B must be a downstream effect—it must be an effect happening after the light hits the eye.

For another case in which the apparent lightness of two equally gray image regions is undetermined by the light hitting the eye from those regions, see the Knill and Kersten illusion (see Knill & Kersten, 1991). Consider the version presented here: <http://gandalf.psych.umn.edu/users/kersten/kersten-lab/images/twocylinders.gif>. The centers of the facing surfaces of the two boxes are the same as each other as well as the corresponding regions of the two cylinders. However, the faces of the two boxes seem to be different, the left box’s face seeming darker than the right box’s.

The examples that we’ve so far considered involve illusions of the apparent darkness of gray regions, but perhaps even more striking are when neutral gray regions take on apparent hues, for instance, neutral gray regions looking yellow or blue as a result of reactions to the nature and organization of other regions of the image. Take, for example an illusion discussed by Lotto and Purves (2002; see especially pp. 626–627 and fig. 9). Beau Lotto makes a version of this available here: <http://www.lottolab.org/illusiondemos/Demo%2012.html>. In this illusion, a pair of pictures of tiled cubes— $5 \times 5 \times 5$ variations Rubik’s famous cubes—differ in the apparent illuminants in the respective scenes: The left cube and its surround seem bathed in yellow light, and the right cube and its surround seem bathed in blue light. The illusory part of this case is that the apparently blue regions on the top of the left cube and the apparently yellow regions on the top of the right cube are all actually the same shade of gray. Both the grayness of the regions and the sameness of the grays are apparent when a monochrome mask is superimposed upon the image, blocking out all but the gray regions.

An especially striking example in which a gray region of an image can appear to have a hue is a version of a “memory color effect” described in a series of publications by Karl Gegenfurtner et al. (e.g. Hansen et al., 2006; Olkkonen et al., 2008; Witzel et al., 2011). In this effect, the memory of the diagnostic colors of certain objects influences the

appearance of achromatic images of the objects. Certain common objects have diagnostic colors, while others do not. For instance, bananas are typically yellow, but there is no particular color that telephones tend to be. Yellow, then, is diagnostic for bananas but not telephones. Also diagnostic for bananas is their distinctive curved oblong shape. The striking effect discussed by Gegenfurtner and his colleagues is that achromatic images of bananas will appear more yellow than achromatic images of objects that do not have yellow as a diagnostic color. One experimental demonstration of the effect is a procedure described in Hansen et al. (2006), where subjects were asked to adjust the colors of images of fruits until the fruits appeared achromatic. The resultant images were perceived by the subjects as gray, but had in reality been shifted in the direction of the hue opposite the fruits' diagnostic colors, for example, blue in the case of bananas. Images of bananas that actually were gray were perceived by the subjects as being yellow.

In the four illusions discussed above, despite differences, there are key similarities. And despite differences in the kinds of explanations that the various researchers offer, there are key agreements. In all four cases, regions of neutral gray can be made to appear different from one another, perhaps even appearing blue or yellow, despite the light reaching the eye from the regions being the same. And however the differences in appearance are to be explained, it seems clear that the explanations must appeal to information gotten from elsewhere besides the very regions in question. For instance, in the Knill and Kersten illusion it matters for how dark a gray region is perceived whether the region is perceived as being on a flat versus a curved surface, and that information is gained from other portions of the picture, in this case, the portions corresponding to the tops and bottoms of the boxes and cylinders. In the case of Gegenfurtner et al.'s achromatic banana that appears yellow, the other parts of the image that help determine the banana shape are key in producing the illusory color appearance.

3.2. *A dilemma for the sensation story*

Let's turn now to examine where stuff starts to seem puzzling for the sensation story. Consider the checker shadow illusion. There's good reason to believe that the effect depends on stuff in the brain much later than the eye, brainy stuff corresponding to the appreciation of what the likely material composition of the board is and what the likely differential illuminations of the various board regions are, especially given that big (and probably opaque) cylinder sitting there.

Anyway, the case can be made to seem especially puzzling from the point of view of the sensation story. On the sensation story, perceiving A as a region distinct from its neighbors depends on perceiving a difference in color between A and its adjacent regions, which in turn depends on different sensations—one corresponding to A and a different color sensation (yes, gray is a color) for A's distinguishable neighbor. Since A is apparently gray, the mind/brain cooks up some gray* sensation—maybe gray₂₄* or gray₃₇*—to correspond to region A, and further must do so before coming to the conclusion that there's a shadow-casting cylinder in the vicinity, since the assignment of

sensations is supposed to causally precede seeing any thing as being a three-dimensional object, or seeing as present any causal relations in the scene, such as seeing the illuminant and the cylinder to conspire in the casting of a shadow. But of the various gray* sensations the mind/brain is capable of coming up with, which one will be assigned to (the visual region corresponding to) A? Whatever it is, will it be the same gray* sensation assigned to region B?

At this point, the sensation story is confronted with a dilemma: Either A and B are initially (before the mind/brain's registration of the presence of any cylinders and cylinder shadows) assigned the same sensations, or they are assigned with different sensations. Each horn of the dilemma leads to unwelcome consequences for the sensation story, consequences that I spell out further immediately below.

3.2.1. *First Horn: A and B are initially assigned the same sensations*

If at this point in the processing story A and B are assigned the same sensations, then either (a) different sensations are assigned later or (b) different sensations are not ever assigned.

If (a) different sensations are assigned later, then it is quite curious why the mind/brain would bother to assign sensations twice upon a single glimpse. Given what it would take to create one of the renderings, what point would there be in making two?⁶ This would not be a very parsimonious explanation of how the mind/brain arrives upon the perceptual judgment that A and B differ with respect to color. However, I do not wish to rest any part of my case on considerations concerning parsimony, for a much more serious problem arises here for the sensation story. If A and B are initially assigned the same color sensations and then later assigned different color sensations, then a very serious question arises as to why the mind/brain would be assigning the same sensations to A and B in the first place. As discussed in Section 2.1, sensations are posited to explain occasions in which things look a certain way with respect to color. Since A and B don't look the same, the considerations discussed in Section 2.1 give no reason for supposing that A and B are assigned the same sensations. As discussed in Section 2.4, sensations are posited to explain perceptual discriminations, where, for example, I discriminate figure from ground in virtue of the different color sensations corresponding to each. Since A and B are being perceptually discriminated—subjects do perceptually judge A to be darker than B—the considerations discussed in Section 2.4 give no reason for supposing that A and B are assigned the same sensations.

We are led now to consider possibility (b), that different sensations are not ever assigned. If different sensations are not ever assigned, then this seems to deprive sensations of one or more of the main reasons they are supposed to be posited. The subject perceives A as darker than B. As discussed in Section 2.4, on the sensation story different sensations are posited to explain such perceptual discriminations. Also, as discussed in Section 2.1, sensations are posited to make perceptual appearances count as distinct from mere thinking. The subject does not merely think that A is darker than B, but has a perceptual state as if A is darker than B, and on the sensational story, different gray* sensations are posited to account for this difference. Thus, if (b) different sensations aren't

ever assigned in correspondence to regions A and B, respectively, then this contradicts core elements of the sensations story, elements discussed in Sections 2.1 and 2.4 that would look to require that different sensations be assigned to A and B.

3.2.2. *Second Horn: A and B are initially assigned different sensations*

If A and B are initially assigned different sensations, then this would seem to be a miraculous instance of backward causation, since the only reason the mind/brain would have for making different assignments is waiting in the future: the not-yet-sensed spatial properties or not-yet-conceptualized presence of causally efficacious three-dimensional objects (cylinders) or their effects (shadows). Consider, for example a kind of case as described by Gegenfurtner and his colleagues. Two achromatic objects of equal shades of gray, one an achromatic disc and the other an achromatic banana, differ in their apparent hue, with the banana appearing yellow. Consider equally gray regions on the disc and the banana, respectively, A on the disc and B on the banana. If A and B are initially assigned different sensations, say gray* and yellow* respectively, then how would the mind/brain know to do that? Plausibly, it is because B is recognized as being part of a banana, a fruit that has yellow as one of its diagnostic colors, whereas no such recognition occurs for the disc. However, equally plausibly such a recognition is mediated by conceptually encoded knowledge, such as the knowledge that bananas are generally yellow. This would seem to indicate, however, that the assignment of yellow* is not causally prior to the conceptualization of the scene as containing a banana, but it is a causal consequence of such a conceptualization. This contradicts the portion of the sensation story discussed in Section 2.3.

Another portion of the sensation story that seems contradicted by the case of the banana is the portion discussed in Section 2.5 whereby spatial properties of objects are sensed by sensing colors and not the other way around. Since the apparent yellow of the actually achromatic banana is a causal consequence of the conceptual recognition of the object as a banana, this question arises: What triggers the conceptualization of the stimulus as being a banana as opposed to an apple or a pear? Here the answer seems quite clear: It is the sensing of the characteristic shape of the banana that triggers the application of a concept of a banana as opposed to the concept of some other fruit. But this puts the order of explanation the wrong way to fit the sensation story. Prior to this particular banana's appearing yellow, it is recognized as a banana which itself, the recognition, depends on sensing the characteristic shape of the banana. So sensing shape in this case comes prior to the banana's appearing yellow. It looks yellow because it is seen to have a banana shape. But this contradicts the account described in Section 2.5 whereby spatial properties are visually sensed by sensing colors. A similar contradiction of the Section 2.5 account can be illustrated by the Knill and Kersten illusion. Whether the adjacent regions in question are perceived as equally dark or not depends on whether the regions are seen to be the flat faces of two adjacent boxes or curved sides of two adjacent cylinders. But this means that the ways things look with respect to their colors is a causal consequence of the ways things look with respect to their shapes.

4. Conclusion

If my argument presented above is a good one, then the popular third-personalist account of color sensations, especially as elaborated along the lines of Sellars and Rosenthal, needs to be abandoned. I cannot provide in the space allotted either a detailed account of what the alternatives are, or a positive case in favor of the alternative that I like best. I close with some necessarily brief remarks toward further investigations.

The following is unlikely to count as an exhaustive list of the possible philosophical approaches to color awareness, but these seem to me to be the main and most popular ones in the current literature. The first is a first-personal approach that holds, regardless of whatever explanations are the right ones for the third-person-accessible stuff associated with color vision, introspection plays a trumping role and there's "just gotta be" color sensations. If such sensations turn out to be nonphysical or epiphenomenal, then so be it. Suffice it to say that I'm not much attracted to this first-personal account.⁷ Neither am I attracted to the second main account of color awareness, which is the third-personal sensation-based account it was the aim of this paper to complain about. Third, and most attractive to me, is a third-personal approach to color awareness that does not carve out any role for sensations traditionally conceived to play. See, especially Akins (2001, 2002, 2014) and Akins and Hahn (2014). Also see Mandik (2012a, b, 2014) and Papineau (2015).

And if you see any bananas, it is ok if you do not see their color first.⁸

Notes

1. See especially Sellars (1963, 1965a,b, 1975, 1977, 1997).
2. See, for instance, Churchland (2005), Lewis (1999 especially p. 259 n. 15), Rosenthal (2005, 2010), Berger (2012), Clark (1993, 2008), Klinecicz (2011, p. 601), Shoemaker (1975), and Weisberg (2011).
3. In eponymous homage to the philosopher Willard van Orman Quine, Dennett's satirical verb "quine" is defined as "to deny resolutely the existence of something real or significant."
4. For overviews, see Bermúdez and Cahen (2015), and Gunther (2003).
5. This point about causal priority may perhaps be regarded as a component of Sellars's view that "impressions are prior in the order of being to concepts pertaining to physical color" (1965b, p. 192).
6. The proposal that the mind/brain makes two different sets of sensations is a version of the explanatory strategy that Dennett criticizes and labels "Stalinesque" (Dennett, 1991, pp. 115–126).
7. See, for instance, Mandik and Weisberg (2008), and Mandik (2010).
8. For helpful comments on an earlier versions of this material, I thank David Rosenthal, Richard Brown, Brit Brogaard, Bob Kentridge, David Papineau, Jason Leardi, and Jake Quilty-Dunn.

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