Subjectivity is no barrier

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These induce a number of fiducial readings. (Dare I say “basic luminance categories”?) Secondary (derived) readings could then be interpolated from pairs of fiducial readings. If my interpolations were inaccurate, my photometer’s readings might not agree with others. The agreement would be disastrous if I calibrated the fiducials of photometer 2, used those of photometer 1 to derive secondaries, and adopted these secondaries directly for photometer 2. That would be analogous to Palmer’s PURPLE = GREEN AND BLUE. To see the analogy more clearly, imagine that WD permutes only the primary measurements, but that the calibration maps the whole luminance scale back to photometer 1, including the interpolated values. To conclude, I am not sure how this partial-calibration exercise could enlighten either a user of photometers or (by extension) a color scientist.

3. Outlook. I have tried here to reinterpret the facts in Palmer’s discussion so as to avoid unanswerable questions in favor of practical answers. I have not entirely succeeded, for metrology itself has an intrinsic philosophical question. Calibration is, in theory, a regress of photometers and light sources. Where does it begin? I shall try a different tack, and present a natural conception of visual experience on which it is hard to get Palmer’s skeptical worries going.3

Imagine seeing a red object – the proverbial ripe tomato. Focus your attention on the salient property of the tomato that it shares with cherries and strawberries. That property is redness, right? And of course red objects – like tomatoes and cherries – look more similar, with respect to color, to orange objects than they do to green objects. These similarity relations among colored objects induce corresponding similarity relations among our experiences of color, rather than the other way around. It is not true that red objects are more similar to orange objects than they are to green objects because our experiences of red objects are more similar to our experiences of orange objects than they are to our experiences of green objects. Rather, the explanation goes the other way: Our experiences are similar because the objects of the experiences are similar. This is because when people have visual experiences they are only aware of what visually appears to them, or of what their experience represents: as it might be, the presence of a red tomato. They are not aware (at least, not without further effort) of their experiences. And similarly with the “nature of the experiences themselves”: The perceived nature of the objects of perception (e.g., the redness of the tomato) explains the nature of perceptions of objects. If a person has a visual experience that represents the tomato as being red, then nothing else needs to be added to this experience for it to have the distinctive “sensory quality of redness” (sect. 2.1, para. 3) that Palmer thinks is hidden from scientific enquiry. Therefore, because there appears to be no special problem about knowing whether objects visually appear red to people, there is no special problem about knowing the nature of others’ visual experiences, and thus there is no “subjectivity barrier.”

Palmer may have been seduced by the following perennially appealing argument for thinking that something else needs to be added to a visual experience that represents something as red for it to have the “sensory quality of redness.” Imagine having a “red” afterimage. Perhaps unreflectively you would be inclined to call the distinctive property of the image “red,” but surely the image cannot really be red – red is a property of physical objects like tomatoes, not “mental objects” like images. So call the property of the image “R” instead. But obviously R is present when you see objects, like ripe tomatoes. And because “mental objects” like images can have R, it does not seem likely that R can ever be a property of a physical object like a tomato. So when you see that a tomato is red, you are aware that the tomato is red and that some image-like thing has R. It is the presence of an R-image that gives your experiences of red objects (and certain afterimages) their distinctive “sensory quality”; similarly, the distinctive sensory quality of your experiences of green objects is due to the presence of a G-image. And now, of course, the question naturally arises whether others’ experiences of red objects are in fact attended by G-images rather than R-images.

As tempting as this reasoning is, it is wrong. If R is to explain the sensory quality of your experience of a ripe tomato, then it is not sufficient that the experience involve an image that has R. It must visually appear to you that the image has R (imagine that even though the image has R, it appears to have G; in that case you would have an experience with the sensory quality distinctive of your experiences of green objects). But now the alleged fact that the image has R is doing no explanatory work: The sensory quality of your experience is solely explained by the fact that it appears to you that the image has R, irrespective of whether the image has R. So the introduction of R was an idle wheel – redness would do the job just as well. Your afterimage experience was a kind of hallucination: It visually appeared to you that something was red (that is what gave your experience its distinctive sensory quality), but nothing in the scene before your eyes was red (that is why it was a kind of hallucination). Furthermore, although it seemed to you that there was an image floating before your eyes, in fact there was no object – not even a mental one – there at all.

Finally, as has been pointed out numerous times (e.g., Cope-
Why asymmetries in color space cannot save functionalism

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Abstract: Palmer’s strategy of saving functionalism by constraining spectrum inversions cannot succeed because (1) there remain many nontrivial transformations not ruled out by Palmer’s constraints, and (2) the constraints involved are due to the contingent makeup of our visual systems, and are therefore not available for use by functionalists.

The possibility of spectrum inversions has been taken to threaten the viability of individuating conscious states functionally – by their connections to perceptual input, behavioral output, and other mental states; such cases hypothesize token states that are functionally identical but nonetheless differ in phenomenal character. Palmer attempts to respond to this threat by pointing to substantive constraints that he says putative inversions would have to meet. However, he ultimately gives up on functionalism for two reasons. First, he is skeptical that his constraints rule out all candidate inversions. Second, he is convinced by absent-qualia objections alleging that no amount of functional connection is sufficient for conscious experience (sect. 2.5).

I share Palmer’s pessimism about the prospects for an adequate functionalist account of color experience. Indeed, I think things are even worse for the functionalist than Palmer allows. For even if Palmer’s constraints worked out better than he supposed, this would still not be enough to save functionalism from the inverted spectrum.

The strategy Palmer considers involves pointing to functional properties of phenomenal characters of color experiences, thereby bringing phenomenal characters under the explanatory scope of functionalism. Palmer argues that phenomenal characters stand with each other in certain empirically salient relations (e.g., of similarity and composition), which must be left invariant by any spectrum inversion (by definition, inversions must leave functional connections fixed), and that this restriction radically constrains the space of putative inversions. Indeed, he suggests that if the relations considered in section 1.4 reflect properties of the phenomenal characters themselves (not sociolinguistically transmitted conventions), there can be no nontrivial isomorphisms, so functionalism would be saved.

Unfortunately, Palmer’s restrictions on spectrum inversions are both too weak and too strong to save functionalism. They are too weak because they do not preclude all nontrivial transformations (even granting the applicability of the constraints of sect. 1.4). For, although Palmer does not discuss them, there remain transformations that map green to green, red to red, and so forth, but effect slight reorganizations within each color category. For example, there are transformations that move each unique color onto a close neighbor within the same color category, while leaving the ordering and metrical relations between colors fixed (slight rotations, or local stretchings/squeezings, of the color space). Could these transformations be ruled out by adding further constraints? They’d better not, for some such transformation seems to be actual: As discussed by Hurvich (1981, pp. 222–23), there is a non-trivial interpersonal distribution of the loci of unique hues. Thus, even if all of Palmer’s constraints are met, interpersonal differences are still possible (and, in some cases, actual) between the phenomenal characters of experiences of the same stimulus under the same viewing conditions.

At the same time, Palmer’s constraints are too strong to save functionalism, because the relational properties involved are due to contingent properties of our visual systems, and hence are not within the reach of functionalism. For, as Palmer points out (sect. 4, para. 6), it is because functionalism individuates states in terms of functional roles irrespective of these roles’ neuroanatomical implementation that functionalists can (and type-identity theorists cannot) say that a given state is shared by actual and possible creatures with widely divergent brain structures. But the relations Palmer wants to leave fixed lack this generality: The generally accepted accounts derive these similarity and compositional relations from the contingent makeup of the minds/visual systems of normal trichromats. Even if this makeup is shared by macaques, it is certainly not shared by all the actual and imaginable creatures (e.g., dolphins, super-sophisticated Martians) to whom we might want to attribute color experiences. Therefore, functionalists can only advert to Palmer’s relational constraints if they are prepared to become species-chauvinists. Presumably they are not, though, or they would not be functionalists.

The modal reflex of this problem is quite serious: If it is to specify the essence of color experiences – to list the features states must have to count as color experiences, rather than just the features color experiences happen to have – functionalism must provide an analysis of the color experiences of any metaphysically possible creature who has them. For this reason, functionalism is vulnerable to spectrum inversions not just between actual human beings, but between any two metaphysically possible creatures. And, as noted, Palmer’s constraints lack this modal power. Although our color experiences might be uniquely constrained by the asymmetries Palmer considers, (1) there seem to be metaphysically possible subjects of whose color experiences this is not true, and (2) it is apparently contingent that we are not such creatures.

If this is right, functionalism can only state metaphysically contingent truths about color experience. Contingent truths can be interesting, but they do not serve the scientific goal of laying bare essences.

NOTES
1. I have two reasons for pressing these points against Palmer even though he ultimately gives up functionalism. First, I think he underestimates the force of inverted spectrum worries. Second, I intend my criticism of the strategy to speak to others (e.g., TYE 1995, p. 202–205) who apply analogous strategies more confidently, and claim to have answered the threat of inverted spectra.
2. See Hurvich (1981) for an explanation of such features in terms of the opponent-process mechanisms of human visual systems.
3. Compare: “Water is my favorite beverage” may be interesting, but it does not tell us the kind of things an acceptable scientific account of water must (viz., “Water is H2O”).