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*Subjectivity is no barrier*

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<b>Citation</b>	Alex Byrne (1999). Subjectivity is no barrier. Behavioral and Brain Sciences, 22 , pp 949-950 doi:10.1017/S0140525X99272214
<b>As Published</b>	<a href="http://dx.doi.org/10.1017/S0140525X99272214">http://dx.doi.org/10.1017/S0140525X99272214</a>
<b>Publisher</b>	Cambridge University Press
<b>Version</b>	Final published version
<b>Citable link</b>	<a href="http://hdl.handle.net/1721.1/50994">http://hdl.handle.net/1721.1/50994</a>
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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 the 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?

## Subjectivity is no barrier

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**Abstract:** Palmer’s “subjectivity barrier” seems to be erected on a popular but highly suspect conception of visual experience, and his “color room” argument is invalid.

Palmer beautifully articulates a view that many philosophers and psychologists have found compelling: In attempting to understand the mind, scientists face an impenetrable “subjectivity barrier,” behind which lies the “nature of [our] experiences themselves” (sect. 2.1, para. 2 and 3).<sup>1</sup> And although Palmer sometimes sweetens the pill with such locutions as “scientists would never know with certainty” (sect. 2.1, para. 1), and “it may not be possible to be sure” (sect. 2.2, para. 3), it is perfectly clear that the conclusions of his arguments are – setting futuristic brainometers aside – that *we* (not just “behavioral scientists”) have *absolutely no reason to believe* (not just no “objective knowledge”) that others have experiences with the same “intrinsic qualities” as our own, or even that they have any experiences at all (sect. 2.5, para. 8). Thus, what might seem at first glance a sober essay curbing the pretensions of science to explain consciousness is in fact a radically skeptical manifesto.

According to Palmer, we can at best know about the relational structure of others’ experiences – the similarities and differences they bear to each other. (For brevity’s sake I shall ignore his further claim that we cannot know that others have experiences.) Skepticism follows because Palmer holds that fixing this relational structure does not fix the “sensory qualities” of experiences.

Palmer’s main examples of a difference in sensory quality with no difference in relational structure are variants of the usual “spectrum inversion” case (Shoemaker 1981). No doubt some commentators will attack Palmer’s argument by questioning whether our color space is as symmetric as Palmer makes it out to be. But this response does not dig deep enough, because on Palmer’s conception there may well be sensory qualities “alien” to us that could occupy the relational structure of our experiences.

A potentially more promising response disputes Palmer’s crucial claim that sensory qualities can vary independently of relational structure. This response subdivides into two: the first agrees with Palmer that interpersonal comparisons of sensory qualities make sense (Clark 1993; Hilbert & Kalderon, in press), whereas the second denies that they do (Stalnaker, in press).<sup>2</sup> As I am unconvinced that the response just mentioned can be made to work,

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.<sup>3</sup>

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-

land 1993), the Chinese room argument is fallacious. The conclusion concerns the *system* (it cannot understand Chinese), but the premise concerns a *part* of the system (the man does not understand Chinese). The argument is an instance of “ $x$  is not  $F$ ,  $x$  is part of  $y$ , therefore  $y$  is not  $F$ ,” and so is invalid.<sup>4</sup> Thus Palmer’s “color room” argument fails to show anything whatever about functionalism and experience.

NOTES

1. Palmer cites Wittgenstein as a supporter, but I think the reverse is true: The view Palmer holds is one that Wittgenstein argued against. Frege – the inventor of modern logic and one of the founders of analytical philosophy – is a much better candidate (see especially 1918/1988, and also 1884/1950, sect. 26, where Frege uses the dual system analogy of the target article [sect. 2.3, para. 11 and 12]).

2. Stalnaker draws a helpful analogy with Von Neumann-Morgenstern utility theory, which assigns utility scales to people who can only be compared intrapersonally, not interpersonally.

3. See Armstrong 1968; Byrne and Hilbert 1997; Dretske 1995; Harman 1990; Lycan 1996; Tye 1995. There are important dissenters, in particular, Block 1990 and 1995.

4. Searle’s response is to let the man perform all the symbolic manipulations in his head, but this appeals to the inference pattern “ $x$  is not  $F$ ,  $y$  is part of  $x$ , therefore  $y$  is not  $F$ ,” which is also invalid.

### 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.<sup>1</sup>

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.<sup>2</sup> 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.<sup>3</sup>

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 kinds of things an acceptable scientific account of water must (viz., “Water is H<sub>2</sub>O”).