

# Colour Hallucination: A New Problem for Externalist Representationalism

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(Final version in Analysis)

Externalist representationalists claim that the phenomenal character of a visual perceptual experience is determined by the representational content of that experience. Their deployment of the idea that perceptual experience is transparent shows that they account for representational content with reference to the properties which are represented – the properties out there in the world. I explain why this commits the externalist representationalist to objectivism and realism about colour properties. Colour physicalism has proved to be the position of choice for externalist representationalists (who tend to be motivated by a commitment to physicalism). However, my aim in this paper is to demonstrate that the proponent of the view which combines externalist representationalism with colour physicalism is unable to account for the phenomenal character of colour hallucination.

## *1. Colour Physicalism*

Colour physicalism is the view that colours can be identified with certain physical properties of objects, typically surface spectral reflectance profiles (the proportion of incident light the object reflects at each wavelength of the visible spectrum). (Armstrong 1969, 1987, Byrne and Hilbert 2003, Dretske 1995, Hilbert 1987, Jackson 1996, 2007, Kripke 1980, Lewis 1997, Matthen 1988, Shoemaker 1986, Smart 1975, Tye 2000) Proponents of this view claim that their account has a number of advantages over rival accounts. One advertised benefit is that it preserves our commonsense belief that objects do indeed possess colour properties (in contrast with eliminativism and subjectivism which deny this). What is more, colour physicalists defend our everyday conception of colours as properties that objects have intrinsically and objectively (rather than in virtue of standing in a particular relation to a certain kind of observer). The view is metaphysically parsimonious since colours are physical properties of objects, and it is in-line with

our scientific account of the causal processes involved in colour perception. After all, the surface spectral reflectance profile of the object does indeed determine the proportion of incident light reflected at each wavelength of the visible spectrum, and this determines the activation levels in the retinal cone cells - the first stage in the causal process leading to our colour experience. Colour physicalism thus seems to accomplish the difficult task of satisfying both our common-sense view of colours and our scientific understanding of the processes involved in colour perception.

If this was the end of the matter the physicalist account of colour would be rather appealing. Unfortunately, our scientific investigations have revealed a surprising fact about the involvement of particular surface reflectance profiles in our colour experiences. Metamers are two (or more) different surface reflectance profiles which we experience as being exactly the same colour under some (it need not be all) illumination conditions. In other words, the colours we experience do not map one-to-one onto particular surface reflectance profiles. Consequently, physicalists have modified their account - colours become disjunctive properties [Smart 1975, Armstrong 1987, Lycan 2001, Shoemaker 1986], or types of surface reflectance [Byrne & Hilbert 2003], or the higher-order property of having one or another surface reflectance. [Tye personal communication] Of course, identifying colour properties with disjunctive properties, types, or higher-order properties makes the physicalist's account rather less attractive. These properties meet the standards imposed by realism and objectivism, but they are rather gerrymandered for all that. (See, for example, Audi 2013 for an argument against the very existence of disjunctive properties.) However, my concern is not with colour physicalism per se, but rather with the position which results from conjoining colour physicalism with externalist representationalism. So now let me explain why the externalist representationalist is committed to colour physicalism.<sup>1</sup>

## *2. Externalist Representationalism*

Representationalists claim that the phenomenal character of our perceptual experiences is determined by (or grounded in, or constituted by, or identical to) their representational content.<sup>2</sup>

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<sup>1</sup> For a discussion of the main philosophical accounts of colour properties see Gow 2014.

<sup>2</sup> The details regarding the precise nature of the relation between representational content and phenomenal character need not concern us here.

For *externalist* representationalists, representational content ultimately depends on the externally located properties our experiences represent. (Dretske 1995, 2000, Lycan 1996, Tye 1995, 2000)<sup>3</sup> This is evident from the way the externalist representationalist deploys the idea that perceptual experience is ‘transparent’ in their dispute with the qualia theorist, who claims that phenomenal character depends (at least in part) on internally realized qualia.<sup>4</sup> Consider the following:

[The transparency claim] tells us that in the case of perceptual experiences, the only qualities of which we are introspectively aware are qualities of external things if they are qualities of anything at all. (Tye 2009: 119)

[T]he key transparency claims are as follows: in a case of normal perception, if we introspect:

- (1) We are not aware of features of our visual experience.
- (2) We are not aware of the visual experience itself.
- (3) We cannot attend to features of the visual experience.
- (4) The only features of which we are aware and to which we can attend are external features (colors and shapes of surfaces, for example) (Tye 2014a: 40)

I experienced blue as a property of the ocean not as a property of my experience. My experience itself certainly wasn't blue. Rather it was an experience that represented the ocean as blue. What I was really delighting in, then, was a quality *represented* by the experience, not a quality *of* the experience. It was the color, blue, not anything else that was immediately accessible to my consciousness and that I found so pleasing. (Tye 2002: 448)

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<sup>3</sup> Some representationalists hold that *mode* or *aspect* also makes a difference to the phenomenal character. (Crane 2013)

<sup>4</sup> In previous work (Gow 2016) I have argued that we should distinguish between *phenomenological transparency* (the idea that perceptual experiences seem only to involve externally located objects and properties) and *metaphysical transparency* (the idea that perceptual experiences in fact only involve externally located objects and properties). Externalist representationalists require metaphysical transparency, yet introspection can only give us (at best) phenomenological transparency. Since we have yet to be presented with a successful argument for deriving metaphysical transparency from phenomenological transparency, transparency claims cannot tell us anything about the metaphysics of perceptual experience.

[W]e normally “see right through” perceptual states to external objects... (Lycan 1996: 117)

It is clear from these quotations why externalists must be objectivists and realists about colour: ultimately, the phenomenal character of our perceptual experiences depends essentially upon the externally located properties to which we are related. As William Lycan points out:

[T]he Representational theory requires color realism, for it explicates color qualia in terms of the real- (and unreal-) world colors of physical objects; “yellow” means the objective, public property inhering in physical objects. One could not then turn around and explicate the ostensible colors of physical objects in terms of color qualia (e.g., as the disposition to produce yellow qualia in normal human percipients). (Lycan 2001: 20)

The only other objectivist and realist theory of colour which is compatible with the externalist’s understanding of transparency is primitivism, which is the view that colour properties are simple, objective, intrinsic, qualitative properties which are not reducible to physical properties. (See Campbell 1994.) However, since externalist representationalists tend to be committed to a physicalist metaphysics, primitivism is not an option they are keen to take up.

Externalist representationalism seems to be in-line with our common-sense understanding of perception as essentially directed on the objective, mind-independent world. However, just as the colour physicalist’s otherwise appealing account was challenged by the phenomenon of metamers, the externalist representationalist’s promising explanatory system is challenged by the phenomenon of *hallucination*. As we have seen from the previous quotations, externalist representationalists explain the phenomenal character of ordinary perceptual experience in terms of the properties in the world of which the perceiver is aware. It is obvious why hallucinations are a challenge for the externalist representationalist’s framework - if Tye’s experience of the blue ocean (say) happened to be a hallucination, then the phenomenal character of his experience cannot be explained with reference to the actual blueness instantiated by the ocean. In hallucinatory cases there are no (relevant) externally located objects and properties, so how do hallucinations get their phenomenal character according to externalist representationalism? The most popular answer is that hallucinations involve the awareness of *uninstantiated* properties. (This position is widely endorsed, see Bealer 1982, Bengson et al. 2011, Dretske 2000, Forrest 2005, Horgan, Graham &

Tienson 2004, Johnston 2004, Lycan 2001, McGinn 1999, Pautz 2007, Sosa 2007 and Tye 2002, 2014a, 2014b.) Tye says, following on from the quotation above:

In the case of hallucinations, (4), in my view, should be replaced by:

(4'') The only features of which we are aware and to which we can attend are locally uninstantiated features of a sort that, if they belong to anything, belong to external particulars. (Tye 2014a: 41)

He also says:

Along with (most) other representationalists, I am happy to say that, in the hallucinatory case, the perceiver is conscious of an un-instantiated property. (Tye 2014b)

Agreed: you cannot attend to what is not there. But on my view there is an un-instantiated quality there in the bad cases... an un-instantiated quality is present in hallucination. (Tye 2014a: 51)

Here is Dretske's analysis:

Hallucinations are experiences in which one is aware of properties (shapes, colors, movements, etc.) without being o-conscious [object-conscious] of objects having these properties.... Hallucinating about pumpkins is not to be understood as an awareness of orange pumpkin-shaped objects. It is rather to be understood as p-awareness [propertyawareness] of the kind of properties that o-awareness of pumpkins is usually accompanied by.... Awareness (ie. p-awareness) of properties without awareness (o-awareness) of objects having these properties may still strike some readers as bizarre. Can we really be aware of (uninstantiated) universals? Yes, we can, and, yes, we sometimes are. (Dretske 2000: 163)

Of course, there are a number of general worries which arise from positing relations to uninstantiated properties, indeed, we may find the uninstantiated properties themselves ontologically problematic (Kriegel 2011, Papineau 2014, Schellenberg 2011). However, I will put these issues aside to focus on a specific objection to externalist representationalism which arises as a result of their commitment to colour physicalism.

### 3. *The Problem*

Imagine that Belinda is having an ordinary perceptual experience of a yellow plastic duck. According to the externalist representationalist, Belinda's experience is transparent, and so the particular shade of yellow involved in her experience is a property of the duck (not a property of her experience). To say that the duck is yellow is to say that the duck possesses the higher-order or disjunctive property of having one or another surface spectral reflectance profiles, or that it has a particular type of surface spectral reflectance profile. (It will be dialectically simpler if I direct my objection to the disjunctive property version of colour physicalism, although it applies equally to the 'higher-order' and the 'type' versions.) Of course, the duck possesses the disjunctive property of having one or another surface spectral reflectance property in virtue of having a particular surface spectral reflectance profile. It is because and only because, the object has one or another of these surface spectral reflectance profiles that it qualifies as instantiating the disjunctive property 'yellow' – so ultimately, the 'yellow' phenomenal character of Belinda's experience depends on a particular surface spectral reflectance property. In other words, Belinda is aware of the disjunctive property 'yellow' in virtue of being aware of the particular surface spectral reflectance property instantiated by the plastic duck.

I must emphasize that it is not part of my claim that Belinda must be aware of one of the disjuncts *as being* the disjunct it is. Nor is she required to know that yellow is a disjunctive property and that her awareness of this colour depends on her being aware of a particular disjunct - a particular surface spectral reflectance profile. My claim is just that Belinda must, *as a matter of fact*, be aware of (in the minimal sense of being relevantly related to) one of the disjuncts.<sup>5</sup> It is important to note, in addition, that Belinda could not be aware of (in the sense of being relevantly related to) the disjunctive property without being aware of one of the disjuncts. In the same way that the plastic duck can only instantiate the disjunctive property yellow by possessing one of the disjuncts (a particular surface spectral reflectance profile), Belinda can only be aware of the disjunctive property by being aware of one of the disjuncts.

Now suppose that Belinda's experience has not been caused in the ordinary way at all; in fact, Belinda is *hallucinating* a yellow plastic duck. Since there is no actual plastic duck in front

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<sup>5</sup> I would like to thank an anonymous referee for pointing out the need for clarification here.

of Belinda, the yellow she experiences which is represented as being a property of a plastic duck is *uninstantiated* (recall the quotations above). However, we need an explanation of how it is that this particular uninstantiated property makes it into the content of her experience: in other words, what makes Belinda's hallucination a *yellow* plastic duck experience rather than a *red* plastic duck experience, or a *blue* plastic duck experience? For perceptual experiences that are caused in the ordinary way, it is easy for the externalist to explain how the disjunctive property gets into the content of the experience: it piggy-backs on one of the disjuncts. Belinda is aware of the disjunctive property 'yellow' by being aware of the particular surface spectral reflectance property which is instantiated in her environment. This explanation is not available in the hallucinatory case, because there is no (relevant) particular surface spectral reflectance property instantiated in Belinda's environment.<sup>6</sup>

The externalist representationalist would seem to have two options when it comes to responding to this challenge. First, they could claim that the hallucinatory case mirrors the ordinary case: Belinda is aware of the uninstantiated disjunctive property 'yellow' by being aware of an uninstantiated *particular* surface spectral reflectance property. Unfortunately, this is a short-lived solution. The problem of metamers reappears; for now we are owed an explanation of which of the metameric particular surface spectral reflectance profiles Belinda's hallucinatory experience involves. Imagine that Belinda owns a collection of yellow plastic ducks, but they all have different surface spectral reflectance profiles (they are metamers). When Belinda has an ordinary perceptual experience of yellow (when looking at one of the ducks) it is easy to specify which disjunct is involved in her experience. She experiences yellow because she is related to a particular surface reflectance property – a property of a particular plastic duck. If the hallucinatory case is going to mirror the ordinary case, then Belinda must be aware of an uninstantiated particular surface spectral reflectance property in order for her to be aware of the uninstantiated disjunctive property yellow. But which one? Since all of the disjuncts of the disjunctive property yellow are equally uninstantiated, there seems to be no basis whatsoever for holding that she is aware of one of them rather than another. This is not a mere epistemic worry; my objection is not just that the externalist

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<sup>6</sup> Colour illusions will also pose a problem for the externalist representationalist. However, the case of seeing something blue as yellow is more complicated than the case of simply hallucinating yellow. The former will, after all, involve a particular surface reflectance property, it just won't be a disjunct of yellow (it will be a disjunct of blue). For simplicity I have restricted my focus to hallucinatory situations. I would like to thank an anonymous referee for asking for clarification on this.

representationalist cannot tell us which uninstantiated particular surface spectral reflectance property Belinda is aware of. My objection is that no sense can be made of there being a fact of the matter at all on the externalist representationalist's view.

Perhaps there is one way that there could be a fact of the matter for the externalist representationalist; they could argue that it is simply a fact about the perceptual psychologies of human beings that we come with defaults. When we are aware of the disjunctive property yellow we default to being aware of a particular disjunct – a particular surface spectral reflectance property. In the ordinary case, our perceptual system overrides this default when there is an instantiated alternative disjunct present, but in hallucinations we revert to the default.<sup>7</sup>

I think that a response along these lines will prove ultimately to be unsatisfactory. Let me explain why. First, we tend to think that what we can hallucinate mirrors what we can perceive in the ordinary way. However, it is a consequence of the view suggested above, that although we can be veridically aware of all of the disjuncts (all the particular surface spectral reflectance properties) we will typically only hallucinate one disjunct. While this may be an unwelcome consequence of the externalist representationalist's view, it hardly constitutes a knock-down objection. A more serious worry with the proposal under discussion is simply that it seems ad hoc. Since there are no independent reasons for postulating the existence of an in-built default mechanism, we are owed an explanation for its origin that isn't merely a stipulation designed to save a threatened theory. I think that a satisfactory explanation will be difficult to find. Externalist representationalist may try to justify a commitment to a default mechanism by appealing to the environment of our evolutionary ancestors. Perhaps our ancestors evolved in an environment where one of the particular surface spectral reflectances dominated (for example). If this was the case, then having a built-in default might confer a selective advantage and its existence could be explained as an adaptation. Unfortunately, metamers are quite common, particularly in the range of dark colours, which suggests that this response will lead to a dead-end.

Of course, the fact that having a default is unlikely to have an adaptive advantage does not prove that we don't have this kind of built-in bias. Perhaps it is an evolutionary spandrel which freerides on an adaptive advantage elsewhere. Now, it is one thing to identify a particular feature in an organism and argue that it is a spandrel, but it is quite another to claim this status for a feature

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<sup>7</sup> I would like to thank an anonymous referee for this interesting response on behalf of the externalist representationalist and their input in the following discussion.



one has no independent evidence for, but has merely postulated to defend one's theory. More importantly, even if having a built-in bias *is* a spandrel, we are still owed an explanation for its existence. Although the explanation for the existence of particular spandrels does not appeal to their having an original selective advantage, we still have (or at least, rightfully expect) an explanation of their origin.<sup>8</sup> Until we are told some plausible story about how we have come to have a built-in default, the idea remains an unmotivated ad hoc claim.

If the externalist representationalist simply denies that they need to explain the origin of the postulated default mechanism, then they are really just conceding the point of my argument. After all, my objection is that they cannot provide an adequate explanation of how there can be a fact of the matter regarding which disjunct we are related to in a hallucination. Stipulating that we come with a default, while denying the need to justify its existence by providing an explanation for its origin, seems no different from granting my conclusion.

So much for the first option for responding to my challenge. The second option the externalist representationalist could take is to argue that one can be aware of a disjunctive property without being aware of one of the disjuncts.<sup>9</sup> However, this would be pretty controversial; an object cannot *possess* a disjunctive property without possessing one of the disjuncts (something cannot be 'red-or-round' unless it is red or round), and this kind of requirement would seem to apply equally to the awareness of disjunctive properties. Let us suppose that 'jade' is a disjunctive property, with the disjuncts being jadeite and nephrite. It just seems obvious that one cannot be aware of jade without being aware of jadeite or nephrite.<sup>10</sup> Being aware of either jadeite or nephrite just is what it is to be aware of jade.

Perhaps the externalist representationalist will say that the hallucinatory case is special; somehow, during hallucinations we can be aware of disjunctive properties without being aware of any of the disjuncts, even though in the ordinary case this would be impossible. There are two

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<sup>8</sup> Consider an example: some species of snail have an open umbilicus which they use as a chamber to protect their eggs. Although this feature wasn't selected specifically for this purpose (it's a spandrel), we do have an explanation for its origin: the snail grows by coiling a tube around an axis and this generates a cylindrical space along the axis. (Gould 1997: 10753)

<sup>9</sup> I would like to thank an anonymous referee for pushing me to develop this idea.

<sup>10</sup> To reiterate a point I made earlier: one need not be aware of the disjunct *as being* (eg.) jadeite or nephrite. Nor need one know that jade is a disjunctive property. My claim is only that to be aware of jade at all, one must, as a matter of fact, be aware of either jadeite or nephrite.

<sup>11</sup> I owe this point to Mark Cremer.

problems with this response. First, it seems to have the flavour of an ad hoc stipulation which has no independent motivation and just functions to bolster a threatened theory. Second, ordinary perceptual experiences and hallucinations would turn out to be very different kinds of perceptual experience – the first would involve the awareness of a particular surface reflectance property (which enables the awareness of the disjunctive colour property), and the second would just involve an awareness of the disjunctive colour property.<sup>11</sup> This would be an unlikely move for a view which is keen to defend the idea that ordinary perceptual experiences and hallucinations are the same kind of state.<sup>9</sup>

#### 4. Conclusion

I have argued that externalist representationalists must be objectivists and realists about colour properties. If they are committed to upholding physicalism, they must be colour physicalists. However, their commitment to colour physicalism leaves the externalist representationalist unable to provide an account of the phenomenal character of colour hallucination.<sup>10</sup>

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<sup>9</sup> Representationalists about perceptual experience defend the ‘common fundamental kind claim’ (ordinary and hallucinatory experiences are of the same fundamental kind) whereas naïve realist disjunctivists reject this idea. They argue that hallucinations fail to qualify as genuinely perceptual experiences. (Brewer 2011, Campbell 2002) See Gow forthcoming for an argument that some versions of representationalism cannot, in fact, maintain the common fundamental kind claim.

<sup>10</sup> I would like to thank Mark Cremer, Alex Grzankowski and two anonymous referees for their extremely helpful comments and suggestions.

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