Color Relationalism and Color Phenomenology*

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Color relationalism is the view that colors are constituted in terms of relations between subjects and objects. The most historically important form of color relationalism is the classic dispositionalist view according to which, for example, *red* is the disposition to look red to standard observers in standard conditions (*mutatis mutandis* for other colors).[1] However, it has become increasingly apparent in recent years that a commitment to the relationality of colors bears interest that goes beyond dispositionalism (Cohen, 2004; Matthen, 1999, 2001, 2005; Thompson, 1995).[2] Accordingly, it is an important project for those interested in the metaphysics of color to sort through and assess different forms of color relationalism.

There is, however, a powerful and general cluster of objections that has been thought by many to amount to a decisive refutation of any and all forms of color relationalism. Although this idea has been developed in a number of ways, the basic thought is that relationalism — qua theory of color — is at odds with the manifest evidence of color phenomenology, and that this clash between theory and data should be resolved by giving up the theory.[3]

*The material in this paper overlaps with parts of chapter 6 of my forthcoming book, *The Red and the Real: An Essay on Color Ontology*. I am grateful to members of the audience at SPAWN, where a version of this paper was presented, and particularly to Bence Nanay, David Chalmers, André Gallois, and Brian McLaughlin, for extremely useful criticism and advice that has improved the paper considerably.

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[1]Many find versions of this position in the writings of Galileo, Boyle, Newton, and Locke. More recently, forms of dispositionalism have been defended by McGinn (1983); Peacocke (1984); Johnston (1992). Note that not all accounts of color that invoke dispositions count as relationalist in my sense. For example, the "physicalist"accounts of Byrne and Hilbert (1997a, 2003); Tye (1995, 2000) treat colors as dispositions to affect (not subjects, but) light; such accounts are not forms of relationalism, since they deny that colors are constituted in terms of relations to subjects.

[2]For the record, I favor a form of relationalism according to which colors are identical to the functional roles of disposing their bearers to look certain ways to certain subjects in certain conditions. For example, I hold that *red for S in C* is the functional role of disposing its bearers to look red to S in C, *green for S in C* is the functional role of disposing its bearers to look green to S in C (and so on). For defense of this view, see Cohen (2009).

[3]Most of the objections of this type that occur in the literature are directed against dispositionalist theories; this is unsurprising, since the elaboration and defense of non-dispositionalist forms of relationalism is a relatively recent development. However, it seems clear that many of the arguments I'll be considering are applicable to forms of relationalism other than dispositionalism. It is

My aim in this paper will be to defend relationalism from three versions of this phenomenological objection. I'll begin, in §1, by responding to the accusation that ordinary color phenomenology presents colors as non-relational, and thereby clashes with color relationalism. Next, in §2, I'll consider a worry to the effect that, were color relationalism true, colors would be invisible — hence, that there would be no color phenomenology at all. Finally, in §3, I'll consider the objection that color relationalism clashes with the evidence of phenomenology by predicting that our color experiences should be partly about experience itself. I'll conclude that none of these objections ultimately provides a compelling reason for giving up color relationalism.

1 Do Colors Look Relational?

Of course, color relationalism is an extremely controversial thesis about the metaphysics of color. However, a surprisingly wide range of writers with a surprisingly wide range of other commitments have been sympathetic to the allegation that color relationalism fails on phenomenological grounds. Specifically, many have held that — with notable exceptions such as the colors of holograms and highly glossy materials — ordinary phenomenology presents colors as non-relational properties of their bearers (Dancy (1986, 181), Armstrong (1987, 36), Boghossian and Velleman (1989, 85), Averill (1992, 556), Johnston (1992, 226–227), Yablo (1995, 489–490), McGinn (1996, 543–544), Tye (2000, 152–153), Chalmers (2006, 56), Gibbard (2006, 10), Averill and Hazlet (2008), and Johnston (2002, chapter 5)).[4] Thus, whatever successes they have along other dimensions, relationalist accounts are accused of representing colors in a (relational) way that unacceptably clashes with the phenomenology of color.

McGinn puts this anti-relationalist worry eloquently (and in a refreshingly explicit way) in the following passage:

> . . . when we see an object as red we see it as having a simple, monadic, local property of the object's surface. The color is perceived as intrinsic to the object, in much the way that shape and size are perceived as intrinsic. No relation to perceivers enters into how the color appears; the color is perceived as wholly *on* the object, not as

my goal in this paper to defend relationalism generally speaking, rather than this or that particular form of relationalism; consequently, while it will sometimes smooth exposition for me to treat the objections in the anti-dispositionalist form in which they come, I'll also comment on the potential extension of my defenses to other forms of relationalism as well.

I should also mention that there is a second type of more theoretical but still broadly phenomenal objection to relationalism that I won't consider in this paper. This second type of objection alleges not that color relationalism conflicts with the phenomenological data, but rather that relationalism cannot be combined with the best metaphysical theories of color phenomenology without leading to incoherence or infinite regress (for a classic articulation of this objection, see Boghossian and Velleman, 1989). I develop and respond to this concern in Cohen (2009, chapter 6).

[4] This objection presupposes that color phenomenology has an intentional content. I am assuming that that presupposition is correct. However, the objection does not presuppose (and I won't presuppose) that color phenomenology can be reductively understood in terms of its intentional content, or that it supervenes on its intentional content.

> somehow straddling the gap between it and the perceiver. Being seen as red is not like being seen as larger than or to the left of. The "color envelope" that delimits an object stops at the object's spatial boundaries. So if color were inherently relational, ... then perception of color would misrepresent its structure — we would be under the illusion that a relational property is nonrelational. Contraposing, given that perception is generally veridical as to color, colors are not relational (McGinn, 1996, 541–542).[5]

However, the phenomenological objection under consideration raises an important puzzle, some answer to which is presupposed by all of the authors mentioned above, and whose solution is necessary before we can properly assess the objection: how, if at all, could phenomenology represent the relationality or non-relationality of color properties in the first place?[6]

To see the force of the question we are pondering, notice that corresponding

[5]In the course of (usefully) attempting to elaborate this complaint, McGinn fleshes out the worry by reference to four distinct features: simplicity, monadicity, locality, and intrinsicness. But it seems to me that the challenges posed by some of these features are more serious than those posed by others.

For example, the claim that phenomenology is at odds with various forms of color relationalism in representing colors as simple seems false; on the contrary, phenomenology represents (surface) colors as having at least the dimensions of hue, saturation, and lightness (Clark, 1993), and perhaps more. (It is a topic of ongoing controversy how many dimensions are needed to encode color appearances.) On the other hand, if phenomenology represents colors as monadic, so do dispositionalism and other forms of color relationalism. These theories claim that colors are constituted in terms of relations to various relata, but those relata have determinate values and so are not open variables in need of saturation by individuals. Just as *to the left of* is non-monadic, and *to the left of Sally* is not, so, too, *disposed to look x to y in z* is non-monadic (if $\ulcorner x \urcorner$, $\ulcorner y \urcorner$ and $\ulcorner z \urcorner$ are variables), but *disposed to look red to S in C* is non-monadic (if $\ulcorner S \urcorner$ and $\ulcorner C \urcorner$ pick out determinate individuals/viewing conditions relative to a context).

I take the most serious of McGinn's worries here to concern the allegation that phenomenology does, and relationalism does not, represent colors as intrinsic (given, perhaps, the view that intrinsic properties are those shared by perfect duplicates (Lewis, 1986)). Accordingly, this is the form of the objection I'll be concerned with in what follows. Note also that leading "physicalist" theories of color such as those of Byrne and Hilbert (1997a, 2003); Tye (1995, 2000) that treat colors as dispositions to affect light — theories that (as noted above) don't count as relational for present purposes — also have the consequence that colors fail to be intrinsic in Lewis's sense, and so face versions of the present objection.

[6] One might hope to answer this puzzle by accepting the thesis Johnston (1992) calls Revelation: "The intrinsic nature of canary yellow is fully revealed by a standard visual experience as of a canary yellow thing" (223). This principle would have it that undergoing color phenomenology brings with it concomitant knowledge of the intrinsic nature of the colors it represents. (It should be noted that Johnston ultimately denies Revelation, although he takes it as a regulative constraint that is part of commonsense conceptions of color, and should be respected as much as possible. Proponents of Revelation-like views include Russell (1912, 47), Strawson (1978, 224), Campbell (1993, 178ff), and arguably Moore (1903, 7, 10).)

Unfortunately, this is an unsatisfactory response to our puzzle. For one thing, nothing has yet been said to motivate Revelation, and it would seem that motivating this thesis is at least as challenging as answering the original puzzle. Second, knowledge of the intrinsic nature of a property may not reveal whether that property is constituted in terms of a relation to subjects (although this will turn on one's theory of intrinsicness). But if not, then even the truth of Revelation would do nothing to explain how undergoing color phenomenology would confer upon one evidence about the relationality of colors.

claims about the phenomenology of non-color properties can seem somewhat bizarre. For some non-color properties (e.g., *being water*, *being square*, or *being a table*) it just seems implausible that phenomenology represents their constitution (*a fortiori*, their relationality or non-relationality) at all. On the contrary, discerning the essences of such properties seems to require much more than simple phenomenology. The additional information needed might be empirical (as in the case of natural kind properties), mathematical (as in the case of shape properties), psychological (as, arguably, in the case of artifact properties), or something else; but in no such case would the simple enjoyment of ordinary phenomenology suffice.[7] The relevance of phenomenology to discerning essence is somewhat less clear for paradigmatic relational properties, such as velocity properties.[8] However, I take it that it is our best theories of the world, and not phenomenology, that tells us that each velocity property is constituted in terms of a relation to a reference frame. (Were this not true it would be hard to explain how non-relativistic conceptions of velocity properties could have had the long scientific life that they did; after all, Newton presumably enjoyed motion phenomenology roughly as often as Einstein did.) One might conclude from these considerations either that (i) phenomenology is entirely non-committal about the relationality or non-relationality of velocity properties or else that (ii) phenomenology represents velocity properties as non-relational but we take phenomenology to be revisable in the light of further (broadly empirical) inquiry. On either reading of the situation with velocity properties, however, it does seem clear that there is some story that needs to be told about when and how phenomenology can have any bearing on questions about property constitution in general, and on questions about the relationality or non-relationality of the properties it represents in particular.

As a way of approaching an answer to this question, let us continue to reflect on the case of velocity properties to see what lessons can be gleaned. If, as I have suggested, phenomenology is not the route to discerning the relationality of velocities, then what is? While the answer surely involves a complicated mix of empirical observation and ratiocination, one ingredient of this mix, in particular, strikes me as highly relevant to the answer: comparison. A strong clue to the relationality of velocities — and a clue that Einstein (1905) relies on crucially in arguing for the relationality of motion properties — is that their exemplification by a particular object depends on variations in the reference frame chosen. That is, comparison reveals that the velocity of x with respect to frame F_1 is different from the velocity of x with respect to frame F_2. Now, it must be emphasized that this sort of evidence is only one piece of a complex

[7]While some have maintained that phenomenology exhausts the essence of certain kinds of phenomenal properties such as *being in pain* (Kripke, 1980), this conclusion won't generalize to color properties unless, implausibly, the latter are construed as phenomenal as well.

[8]In saying that velocity properties are relational I mean that velocity properties are constituted in terms of relation to reference frames — something I take to be an uncontroversial lesson of 20th century physics. Note that this claim is *prima facie* compatible with (but by no means makes compulsory) the view, defended by Tooley (1988), that velocities are intrinsic to individual instants.

chain of reasoning leading to the conclusion that velocity properties are relational; in particular, this evidence won't establish that conclusion unless we can rule out (by some combination of evidence and ratiocination) the alternative hypothesis that one or the other otherwise incompatible representations of x's velocity (one representation in F_1, the other in F_2) is erroneous. But if that alternative hypothesis is rejected, then comparative data of the sort we are considering provides strong (but defeasible) support for the view that velocities are relational.

I now want to suggest that this lesson can be generalized more widely. The idea would be that, for other target families of properties, too, comparative evidence of this sort is crucial (but, as always, defeasible) in testing for the relationality or non-relationality of its members. Namely, as in the motion case, we can test for the relationality of a property (in a family of properties) to a parameter by altering the value of that parameter and checking to see whether this change has the effect of modifying which (if any) member of our target family is exemplified. To see the power and correctness of this method, consider its application to a few test properties. The method correctly predicts that shape properties are *not* constituted in terms of a relation to viewing angle, for example, because square objects (say) continue to be square regardless of the angle from which they are viewed (or so we think). The same method correctly predicts that the "meteorological" properties we ascribe by saying 'it's raining' or 'it's sunny' are constituted in terms of a relation to location and time, since their applicability is a function of those two parameters. Likewise, as Shoemaker (1994, 254–255) notes, this test shows that *being heavy* is constituted in terms of a relation to a (potential) lifter and gravitational field. This comparative test, then, delivers the right verdicts about a range of properties other than colors.

Of course, phenomenology seems largely irrelevant to the application of the comparative test to the cases we've considered so far; all that that test demands is that we assess whether an object persists in its exemplification of a target property as we modify the value of some parameter. But phenomenology could play a role in this test if it should turn out that the object's exemplification of the target property is somehow essentially tied to phenomenology.

To see what this amounts to in a concrete case, consider the so-called shimmering or unsteady colors such as those on the backs of CDs or in holograms — colors that are often put forward as examples of colors that (unusually) are represented phenomenally as being relational (e.g. Johnston, 1992, 226–227).[9] Applying the comparative test to these unsteady colors (with respect to the parameter of viewing angle) means testing to see whether an object maintains or varies its unsteady color as it is viewed from different viewing angles. Crucially, however, in this case, we assess the object's unsteady colors from each viewing angle primarily (perhaps only) by attending to the way in which it is phenomenally presented when viewed from that angle. Here, then, applica-

[9]The distinction between "unsteady" and "standing" colors is made by Johnston (1992, 141), who attributes it to Rossotti (1983, chapters 3–4).

tion of the comparative test means engaging in *comparative phenomenology*. And what the test reveals is that unsteady colors are relational (constituted in terms of a relation to viewing angle). That is so because even very slight variations in viewing angle of the kind that we engage in — often involuntarily — in ordinary perceptual circumstances show up in the phenomenal representation of their colors: by very slight and often involuntary motions, we obtain in quick succession a visual representation of x's color when viewed from angle α and a visual representation of x's color when viewed from angle β, and find that these two representations differ phenomenally.

These considerations involving comparative phenomenology explain three related facts. First, that unsteady colors behave this way explains the widely held view (even among those who take steady colors to be non-relational) that the unsteady colors of surfaces are constituted in terms of a relation to the viewing conditions under which they are perceived. Second, the fact that the conditions under which we view shimmering surfaces gives us (often involuntarily) the comparative information we need to carry out the comparative test explains why the latter view is widely held in the first place — typical perceptual circumstances provide us with the needed data, and once the data are in our possession, it is hard to avoid drawing the obvious conclusion from them. Third, and even more significantly, these considerations address our initial question by showing how phenomenology can speak to the relationality or non-relationality of a target property. Namely, when phenomenology provides our evidence about the exemplification of that property, then comparative phenomenological data collected across variations in relevant parameters can serve as grounds for inferences about the relationality/non-relationality of the target property.

But now I want to suggest that the so-called steady colors meet this criterion, so the comparative phenomenological test just used to assess the relationality of the unsteady colors should be applicable to the steady colors as well. The significant difference between the two is that, in the case of steady colors, we need systematic psychophysical comparison, rather than just the conditions of typical perception, to bring out the relevant comparative data. In particular, we need to compare the visual representation of x's color when viewed by S_1 in conditions C_1 against the visual representation of x's color when viewed by S_2 in conditions C_2. Now, it turns out that ordinary, everyday color phenomenology doesn't provide the materials needed for these kinds of comparisons all by itself. For one thing, ordinary phenomenology can't (by itself) facilitate comparisons between subjects S_1 and S_2. For another, what distinguishes "steady" colors from shimmers is that one can easily obtain a phenomenal representation of x's color for oneself in C_1 without obtaining a phenomenal representation of x's color for oneself in C_2. This means that testing for the relationality of "steady" colors will require more than the unsystematic, ordinary phenomenology we undergo outside the psychophysics lab.[10] Or, in the words of Janet Levin,

[10]Boghossian and Velleman (1989) miss this point, and therefore apply (what seems to me to be)

> Ordinary perception of color may *seem* to reveal colors to be simple monadic properties, just as a quick glance may seem to reveal an object with color highlights to be an object that is "steadily" striped. But in both cases, the "glances" are too quick to be definitive, given the sorts of experiences required for making the distinction; in neither case can these judgments be expected to reflect what perception in the proper circumstances would in fact reveal (Levin, 2000, 157).

On this matter I agree strongly with Levin: isolated and momentary phenomenal presentations ("glances") are insufficient to bring out the relationality of both so-called steady and unsteady colors, because the comparative information needed to make their relationality apparent is more than such isolated and momentary phenomenal presentations make available.

Now, one respect in which my thinking about these matters differs from Levin's is that she focuses on interpersonal comparisons as the key to bringing out phenomenally the relationality of colors. Since interpersonal phenomenal comparisons are, arguably, never made available by ordinary perception (by itself), Levin concludes that the conditions under which colors would be phenomenally represented as relational, "alas, are not available even in a lifetime of normal perceptual experience" (157). But, in my view, phenomenal evidence of the relationality of color can, in principle, be marshaled from intrapersonal phenomenal comparisons — comparisons that are, plausibly, more readily available in ordinary perception.

In any case, it seems clear that the most direct and systematic methods for making the relevant comparisons (whether interpersonal or intrapersonal) are those used in the psychophysics lab. That is, the systematic comparisons we need are made available by precisely the kinds of psychophysical methods frequently exploited in motivating relationalism (e.g., see Cohen (2004)). Namely, these methods allow us to ask S_1 and S_2 to make phenomenal matching judgments of x's color relative to various perceptual conditions, and thereby to compare the phenomenal representation of x's color for S_1 in C_1 against the phenomenal representation of x's color for S_2 in C_2. Significantly, carrying out those comparisons shows that the pair of phenomenal representations *differ* as a function of the subject and the perceptual circumstances. As in other applica-

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the wrong criterion to test whether phenomenology presents colors as relational/dispositional:

> If colours looked like dispositions, however, then they would seem to *come on* when illuminated, just as a lamp comes on when its switch is flipped. Turning on the light would seem, simultaneously, like turning on the colours; or perhaps it would seem like waking up the colours, just as it is seen to startle the cat. Conversely, when the light was extinguished, the colours would not look as if they were being concealed or shrouded in the ensuing darkness: rather, they would look as if they were becoming dormant, like the cat returning to sleep. But colours do not look like that; or not, at least, to us (Boghossian and Velleman, 1989, 85).

In fact, if Boghossian's and Velleman's observations are correct, then they show only that (non-shimmering) colors are not constituted in terms of relations to parameters whose values shift under ordinary conditions of perception by a single subject. And, of course, this falls far short of showing that colors are not relational/dispositional.

tions of the comparative method, this finding gives (defeasible) support for the idea that our target property (in this case, x's color) is constituted in terms of a relation to the parameters under consideration (in this case, the subject and the perceptual circumstance).

What all of this shows, I think, is that phenomenology represents the steady colors of tables and chairs as relational to exactly the extent and in exactly the way that it represents the unsteady colors of CDs and holograms as relational. This can be taken in two ways, depending on how expansively we think about what phenomenology amounts to. If phenomenology is restricted to single, isolated, representations that are not integrated with ratiocinative reflection (Levin's "glances"), then I think phenomenology reveals neither steady nor unsteady colors as being relational. On the other hand, if we take a broader view of what phenomenology includes — in particular, if we take within the purview of phenomenology both systematic (psychophysical) and ordinary comparisons between phenomenological representations, together with inferences reached on the basis of such comparative data, then it seems to me that phenomenology reveals both unsteady and steady colors to be relational.

Why, then, have many theorists agreed that phenomenology differs in what it reveals about steady and unsteady colors, and therefore endorsed the phenomenological objection against color relationalism? Part of the answer, I suspect, is that have been unclear between the narrower and broader understandings of phenomenology spelled out above. As noted, ordinary perceptual circumstances make it difficult to avoid carrying out comparative phenomenology with respect to "unsteady" colors, and I believe this fact has prevented many from seeing that they were engaging in comparisons (or ratiocination based on these comparisons) at all. And this has encouraged many to believe that phenomenology in the narrower sense reveals the relationality of unsteady colors, when, in my view, it is phenomenology in the broader sense that is responsible. In effect, then, such thinkers have gone looking for phenomenological evidence in the wrong place. This, in turn, has led to the erroneous expectation that, were so-called steady colors relational, then phenomenology understood in the narrower sense would also reveal this fact. As it happens, it does not. Moreover, since the manipulations required to bring out the relationality of steady colors do not occur "all by themselves" in ordinary perception, subjects are left without the phenomenological evidence they would need to come to a suitable conclusion on this matter. But since they lack the requisite evidence, and also (wrongly) believe they would possess such evidence if it existed, they have concluded (wrongly) that steady colors are phenomenally represented as non-relational. Which is to say that, after having looked for phenomenological evidence in the wrong place, such thinkers have compounded their error by mistaking an absence of evidence for evidence of absence.

This diagnosis is supported by the observation that exactly the same sort of error can arise in the case of non-color properties that are less controversially relational. Thus, to use Shoemaker's example, the natural limitations on the comparative evidence available to us in assessing the heaviness of objects can erroneously lead us (at least initially, until we seek out comparative evidence

and take it into account) to think that phenomenology represents *being heavy* as non-relational. For, at least initially, I might ascribe or forebear the property *being heavy* just on the basis of the narrow phenomenal episodes I undergo when I lift them, given the (relatively stable over time) strength and physical build that I happen to have, and in the context of a relatively unchanging gravitational field (it changes so little mainly because, in the course of my ordinary travel, I don't alter significantly my distance from the center of the earth). As before, restricting myself to non-comparative phenomenological evidence of this kind will not show up the relationality of the target property; indeed, my contention is that narrow, isolated episodes of phenomenology ("glances") neither reveal *being heavy* to be relational nor to be non-relational. Someone who (wrongly) expected her narrow phenomenology to represent all and only relational properties as being relational would wrongly conclude on the basis of her narrow phenomenology that *being heavy* is not relational. But, as before, this would be an erroneous conclusion reached by taking into account the wrong kind of phenomenological evidence (viz., narrow rather than broad phenomenology).

I take these considerations to show that there is both a good sense in which phenomenology can speak to the question of whether colors (steady and unsteady alike) are relational or not, and another good sense in which phenomenology won't speak to that question. The sense in which it will is the sense in which phenomenology includes systematic comparisons of the sort made available by psychophysical methods, combined with ratiocination. The sense in which phenomenology will have nothing to say about the relationality or otherwise of colors is one in which phenomenology is restricted to introspection on isolated, momentary experiential episodes. Of course, the narrower brand of phenomenology won't reveal colors as relational — but that is only because it is unsuited to discovery of relationality where it exists at all. In contrast, employing the broader conception of phenomenology leads to the conclusion that colors *are* relational. On neither, conception, however, are we justified in concluding that phenomenology represents colors as being non-relational.

2 Are Relational Properties Visible?

A second potentially powerful and generalizable phenomenal objection against relational theories of color builds on the platitudinous claim that colors are visible — i.e., that instances of colors (if not color properties themselves) can be seen. However, critics have alleged, (instances of) dispositional/relational properties are not the sorts of things that can be seen, even if it is allowed that their relata can be seen. Rather, these critics urge, the exemplification of such dispositional/relational properties by particulars is something we *infer*, possibly on the basis of the exemplification of other properties that we do see.[11] If

[11]Obviously this objection presupposes the viability of a distinction between what we see and what we infer. While this presupposition is controversial (see Churchland, 1979; Fodor, 1984), it's appropriate for me to grant it for concessive reasons (if no other).

that worry is correct, then relational accounts of color would entail the absurd conclusion that colors are not visible.[12]

Once again, this objection is given a particularly clear exposition by McGinn (1996), who frames the issue in terms of the question of what can be a direct object of the seeing relation:

> When you look at an object you do not see (de dicto) its dispositions to act in certain ways in certain circumstances, but you do see what color it is. Here, of course, I mean direct object perception, not just seeing-that — seeing the property itself, not merely seeing that it is instantiated. You may see *that* something is soluble by watching it dissolve, but you do not see its solubility — that property itself. You can see the manifestation of the disposition, and you may also see the categorical basis of the disposition in the object's molecular structure, but your eyes do not acquaint you with the property of being *disposed* to dissolve.... And now the point about colors is that they enter the very content of primitive visual experience, being part of how objects appear, but dispositions of whatever kind cannot themselves enter visual content in this way (McGinn (1996, 540); cf. Mackie (1976, chapter 1)).

Although McGinn presents this objection in the first instance as a reason for rejecting the dispositionalism he had endorsed earlier (McGinn, 1983), the threat he poses clearly generalizes to other forms of relationalism as well: if colors are possible direct objects of seeing, then any relationalist account of color will be threatened by the worry that relational properties — as opposed to their relata — cannot be direct objects of seeing.

Now, one possible line of resistance to this argument turns on a thought developed by McGinn himself, in his earlier defense of dispositionalism (McGinn, 1983, 133–135). This line of resistance turns on the idea that 'sees' introduces a highly intensional context — one where sameness of sense and reference does not guarantee intersubstitutability *salva veritate*.[13] If true, this claim would explain why 'I see redness' could be true while 'I see the disposition to look red' could be false even if (as per some forms of dispositionalism) 'redness' and 'the disposition to look red' are alike not only in reference but also in sense. Unfortunately, this answer strikes me as unconvincing. For while I take it to be extremely plausible that (the phenomenal use of) 'looks' introduces such a highly intensional context (see § 3), it seems (at least, to my linguistic intuition)

[12]Mark Johnston attempts to extend the absurdity here by arguing that, if we didn't see (instances of) colors, we would not see objects (Johnston, 1992, note 1). This argument, however, is unconvincing as it stands: even if we could not see instances of colors, it is left open that we could (veridically) see objects by undergoing color illusions — i.e., we could see objects by seeing that they look colored, even if it turns out that we never see any veridical instances of colors (say, because nothing is colored, as per color irrealism).

Once again, it is worth noticing that a version of the worry considered here for relationalism arises for those non-relational theories of color that identify colors with dispositions to affect light.

[13]A version of this response to the objection is also considered by McLaughlin (2003), although he doesn't put much weight on it.

not only that the context created by 'sees' is not so highly intensional, but that it is *extensional*; but if so, then the proposal under consideration is just inapplicable to the case at hand.

On the other hand, I do not believe that the present objection against relationalist views is decisive. In particular, I do not see a reason for accepting the premise that colors, if dispositions or otherwise constituted in terms of relations to perceivers, are *ipso facto* not suitable for being the direct objects of seeing. (For ease of expression, in what follows I'll discuss this point only in terms of dispositional versions of relationalism, but I hope it is clear that the response can be generalized.) At least in McGinn's presentation above, the case for this conclusion rests almost entirely on the analogy with the dispositional property *solubility*. Although this is controversial, I am prepared to spot McGinn the assumption that dispositions such as *solubility* and *fragility* are not — or, are not directly — objects of the seeing/looking relation.[14] However, this might be thought to overlook relevant differences between dispositions, some of which can be the direct object of seeing, and some of which cannot.

The reason we should take this possibility seriously, it seems to me, is that the dispositions identified with colors by dispositionalists — in dramatic contrast to paradigm dispositions like *solubility* or *fragility* — have visual experiences as their manifestations. And the reason this matters to the question about whether dispositions can be seen is that it is plausibly constitutive of seeing a disposition to look red (as it might be) that one undergoes the visual experience that is the manifestation of that very disposition. In this spirit, McDowell asks, "What would one expect it to be like to experience something's being such as to look red, if not to experience the thing in question (in the right circumstances) as looking, precisely, red?" (McDowell (1985, 112) (cf. Levin, 2000, 154–155)).

We can buttress this thought by locating it against the following sufficient condition for property seeing: S sees property P if, by visually attending to an exemplification of P by x, S is (non-deviantly) caused to undergo a visual experience that represents x as exemplifying P. Now, a couple of remarks about this condition for property seeing are in order.[15] First, the condition explicates seeing a property in terms of seeing one of its instances. I take this to be appropriate, since I assume we causally interact with properties only in virtue of causally interacting with their instances. Second, some readers might object to the idea that we see properties (/their instances) by visually attending to them, and instead hold that we visually attend to these things only by seeing them. While there may be some understanding of visual attention that substantiates this objection, I am here understanding visual attention as an early and encapsulated mechanism that selectively allocates the resources of the visual system to objects/regions; so understood, it seems to me that property seeing should depend on visual attention rather than vice versa. Third, the condition is only offered as a sufficient condition, rather than a necessary and sufficient condition, for property seeing. One respect in which it fails to be a necessary

[14]For dissent on this point, see Anscombe (1981); Cartwright (1989).

[15]Thanks to Brian McLaughlin for urging me to clarify my thoughts on these matters.

condition involves misrepresentation: in cases where, by visually attending to an exemplification of P by x, S is non-deviantly caused to undergo a visual experience that (mis-) represents x as exemplifying Q, I am inclined to hold that S nonetheless sees property P. Finally, many philosophers have worried that dispositions — as opposed to their categorical bases — can't cause their manifestations. If they are right about this, then the present account won't allow that subjects can see dispositional properties (hence, given dispositionalism about color, won't allow that subjects see colors), since it won't be possible for dispositions to look red (for S in C) to cause objects to look red (for S in C). This concern, of course, is only as good as the underlying assumption that dispositions are unable to cause their manifestations. But I think the extant arguments for this assumption, which turn mostly on Kim-style considerations about the threat of causal overdetermination by multiple factors each causally sufficient for the outcome (Kim, 1989a,b, 1993a, 1998), are unconvincing.[16]

The thought I'd like to pursue, then, is that the dispositionalist's colors can (unlike *fragility*) be seen in this sense of property seeing because the dispositionalist's colors (unlike *fragility*) have visual experiences as their manifestations. For example, suppose a ripe tomato exemplifies the disposition to look red, and suppose the viewing conditions are propitious; then precisely in so far as the disposition manifests itself, it will be true that by visually attending to the tomato's redness I am (non-deviantly) caused to undergo the particular visual experience that represents the tomato as red.[17] For this reason, it is plausible for a dispositionalist to hold that the occurrence of the disposition's manifestation is constitutive of my seeing the tomato's (by hypothesis, dispositional) color property.

Of course, this won't make it the case that we see all dispositions; in particular, and as desired, this account won't make it the case that we see dispositions whose manifestations are not visual experiences, for they won't meet the sufficient condition for property seeing given above (although this allows that we might succeed in seeing those properties or their instances in some other way — the condition is only a sufficient condition for property seeing). If, for example, a vase exemplifies *fragility*, even if I attend to this state of affairs, the

[16]The literature contains a large number of responses to such Kim-inspired arguments. One common response involves the allegation that the argument overgeneralizes and (unacceptably) threatens the possibility of causal explanation in terms of the kinds of special sciences quite generally speaking (Fodor (1989, 138–141); van Gulick (1992, 325); Baker (1993, 77); Burge (1993, 102); but see Kim (1997) and Kim (1998, 77–87, 112–120)). A different line of response, brought out by Loewer (2007), is that, contrary to what proponents of such arguments often maintain, the multiple factors involved (here, the base property and the disposition) are *not* causally sufficient for the outcome (here, the manifestation of the disposition). Indeed, nothing less than the total state of the universe at a time is causally sufficient for the outcome; but there seems no reason to fear causal overdetermination by a pair of factors each of which is *not* causally sufficient for the outcome.

[17]The claim here is not that we see the disposition *by* seeing the visual experience that is the manifestation of the disposition — indeed, I deny that we see our visual experiences except in highly abnormal circumstances (such as those involving invasive neurosurgery). Rather, the claim is that the visual experience itself (when it is appropriately caused by something to which we are visually attending) is the manifestation of the disposition, and that undergoing (rather than seeing) such a visual experience constitutes seeing the disposition (in the direct object sense at issue).

manifestation of the disposition leaves entirely open whether I'll undergo a visual experience that represents the vase's fragility. This is because, in this case, the disposition's manifestation (here, a shattering) is independent of the occurrence of any visual experience at all.

What all this shows, I suggest, is that the unsuitability of some dispositions to be objects of the seeing relation is compatible with the claim that colors, if dispositions, can be the objects of the seeing relation.

And now we should notice that forms of the response I am recommending are also available to non-dispositionalist relationalists for whom the current threat about the invisibility of colors arises. Although the details of the analysis will differ depending on the form of relationalism on offer, the key insight on which the answer depends is general: namely, it is that we can understand how a relational property R is seen by a subject S if the relevant relation eventuates in a visual experience in S that represents R's exemplification.

I conclude, then, that, contrary to the present worry, color relationalists can endorse the platitudinous view that colors are visible.

3 Phenomenology about Phenomenology?

According to dispositionalism and several other forms of color relationalism, colors are constituted in terms of relations to subjects that involve those very subjects undergoing phenomenal experiences.

For example, suppose we hold the form of dispositionalism according to which *red for S in C* = the disposition to look red to S in C. If, (plausibly) something's looking red to S in C requires that S undergo a phenomenal experience of some sort, it would seem that what it is to be red involves constitutively an episode of phenomenology. Now suppose S has a phenomenal experience that represents x as red. Assuming dispositionalism, this means that her phenomenal experience has as its content that x is disposed to look red. And, given what we've said above, this means that the phenomenal experience has as its content something like this: that x is disposed to produce in S phenomenal experiences of a certain kind. This means that, assuming the truth of dispositionalism (and the relatively uncontroversial claim that x looks red to S only if S undergoes a certain phenomenal experience), phenomenal experiences of x's being red will have as part of their content a claim about phenomenal experience. Moreover, and for the same reasons, an analogous conclusion follows from non-dispositionalist forms of relationalism according to which the relation between subjects and objects that constitutes color properties is one that requires the subject to undergo a certain phenomenal experience. All of these relationalist views have the consequence that color phenomenology represents phenomenology (*inter alia*).

However, some have found this consequence implausible. Reflecting on their own color phenomenology, they simply do not find that their experiences have any representational commitments about phenomenology. Thus, McGinn complains that,

> I do not have experiences *of experiences* when I see something red. When I see an object as red I see *it* as having a property; I do not see any sensations that might be occurring in perceivers.... My experience type does not enter its own content. (McGinn, 1996, 542).

According to this thought, my ordinary experience of a ripe tomato, as it might be, represents the fruit's size and shape, but is just not committed in any way to any claims about visual phenomenology. One might be sympathetic to this claim because one shares the oft-cited "Moorean" intuition to the effect that phenomenal experience *always* represents distal objects and their properties rather than mental entities and their properties (see Harman, 1990). Alternatively, one might take the weaker view that, at least in ordinary, non-reflective settings, the contents of phenomenal experiences (or phenomenal color experiences in particular) do not involve mental entities, *a fortiori* do not involve phenomenal experiences. Either way, once again, the worry is that relationalism (in at least some of its forms) seems to have an entailment that is at odds with the data of ordinary color phenomenology.

It is important to note that the worry under consideration is *not* that the invocation of phenomenology in a phenomenal representation results in a theory that is viciously circular or otherwise objectionable.[18] That is to say, the difficulty is not merely that the invocation of phenomenology in a phenomenal content is itself somehow incoherent. It is that the invocation of phenomenology as the content of the particular sort of phenomenal representations at issue is, it is claimed, erroneous as a description of that content.

How should relationalists respond to the objection now before us? In my view, they should respond by rejecting the alleged phenomenal datum on which it is based. In particular, relationalists should reject the claim that color phenomenology does not represent properties whose nature is explicated in terms of phenomenal experience. What the relationalist should claim is that such experience-involving properties are constituents of the contents of color experience, but that their experience-involving natures are hidden from those who undergo color phenomenology, even when those subjects attend carefully to their experiences. That is, a subject who undergoes color phenomenology thereby has an experience that represents a color property whose nature involves color phenomenology as a component; but in undergoing that phenomenal episode, the (experience-involving) nature of the represented color property is not made apparent to the subject even upon careful reflection on her experience.

This response, of course, presupposes that it is possible to represent in one's phenomenal experience properties whose essence is not known to one; but I think that that commitment is perfectly reasonable and well-precedented. After all, even if you and I know the essence of water, presumably Homer was able to enjoy — and carefully attend to — water phenomenology despite lacking this piece of knowledge. Had someone proposed to Homer that water is H_2O, it would not have been reasonable for him to object that water couldn't

[18] For a response to that worry see Cohen (2009, chapter 6).

have hydrogen as an essential constituent on the grounds that his water phenomenology failed to disclose the involvement of hydrogen upon careful attention. That this is so should not be thought to depend solely on Homer's failing to have a concept of hydrogen. For it seems that someone who knows quite a lot about hydrogen might also reflectively undergo water phenomenology without thereby coming to know the constitution of water(cf. Rodriguez-Pereyra, 2002, 93–94). Again, it would be unreasonable for such a subject to object that water couldn't have hydrogen as an essential constituent on the grounds that her water phenomenology failed to disclose the involvement of hydrogen upon careful attention. Likewise, then, it seems to me that it would unreasonable to object to the identification of *being red to S in C* and the disposition to look red (to S in C) on the grounds that one's red phenomenology fails to disclose the involvement of visual phenomenology upon careful attention.

Another way to put the foregoing is to say that phenomenal occurrences of 'looks' in locutions of the form 'x looks red (to S in C)' create highly intensional contexts — contexts within which substitution of extensionally (or even analytically) equivalent expressions is not truth-preserving (cf. McGinn, 1983, 134ff).[19] Thus, although to be wet just is to be covered in a certain way with H_2O, it is illegitimate to infer from 'x looks wet' to 'x looks to be covered in a certain way with H_2O'. Or, again, although to be humorous just is to be disposed to cause characteristic amusement reactions in appropriately situated cognizers, it is illegitimate to infer from 'x looks humorous' to 'x looks disposed to cause characteristic amusement reactions in appropriately situated cognizers'. So, too, the failure of the inference from 'x looks red (to S in C)' to 'x looks appropriately related to a (certain type of) phenomenal experience' should not be taken to impugn the color relationalist's identification of color properties with experience-involving essences.

I claim, then, that careful reflection on one's color phenomenology by conceptually competent subjects can fail to disclose the nature of the properties that are constituents of the contents of those experiences. Experience of colors does not amount to an unmediated, acquaintance-like connection with the colors.[20] This explains why, as I suggested in §1, isolated episodes of color phenomenology must be supplemented by (sometimes extensive) comparison and ratiocination before they can teach us about the nature of colors. Color phenomenology does relate us to the colors, but it is no substitute for the hard, broadly empirical, work necessary for determining how colors are constituted.

[19] I think this is so because color experiences (like water experiences) present the properties that are constituents of their contents under modes of presentation. Proponents of non-relationalist theories of colors (e.g. Tye, 1995, 133) have sometimes held this view as well (although Tye (2000, 56–57) later repudiated it). As Tye points out, if there are modes of presentation involved, they should be the kinds of modes of presentation that are available to infants and non-human animals (assuming, plausibly, that things can look colored to such creatures). And this gives some reason — depending on one's theory of concepts, to be sure — for denying that the modes of presentation in question are conceptual. However, I see no reason that they would have to be conceptual; instead, one might regard them as perceptual (non-conceptual) modes of presentation.

[20] For reasons discussed in note 6, this claim can be accepted even by those who endorse Revelation.

Of course, saying this means accepting that the identity statement linking colors and experience-involving relations to subjects is, at best, *a posteriori*. I am prepared to accept this conclusion: I hold that broadly empirical support, rather than simple phenomenal experience together with armchair reflection, is necessary to defend color relationalism. Consequently, unlike many other color relationalists, I deny that color relationalism is an *a priori* thesis.

In any case, it seems to me that the absence of phenomenal evidence of experience-involving elements in the color properties one represents phenomenally cannot be taken as evidence of the absence of such elements in the natures of colors. But since the objection we have been considering in this section turns on treating our phenomenal evidence as just such a criterion, it is unsuccessful as a complaint against color relationalism.

4 Conclusion

For many writers, the most important shortcomings of relationalist accounts of color are phenomenological. While they (sometimes) acknowledge its other virtues, these writers allege that color relationalism presents colors in a way that conflicts with the way in which color phenomenology presents colors, and that the only intellectually virtuous response to this clash is to reject the offending theory rather than the data.

However, I have argued in this paper, the phenomenological objections pressed against relationalism by its critics are unconvincing. Once we make clear just what and how color phenomenology can and cannot tell us about the nature of color properties, it turns out that phenomenal data support, rather than detract from, the case for relationalism. I conclude that color phenomenology is not the stumbling block for color relationalism that many have held it to be.

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