Colour Relationalism, Contextualism, and Self-Locating Contents

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1. Colours and Their Representation

In addressing the metaphysical question of what colours are, a consideration that is commonly appealed to is how colours are represented—typically in perceptual experiences, but also in beliefs and linguistic utterances. Although representations need not accurately reflect the nature of what they represent—indeed, they need not represent anything that actually exists at all—the way colours are represented is often taken to provide at least a defeasible guide to the metaphysics: all else being equal, it seems we should prefer a theory of what colours that is consistent with the way that they appear; otherwise, our theory of the nature of colour entails a potentially unattractive error theory about ordinary colour ascriptions.

For example, a common objection to dispositional theories of colour is that colours just do not look like what, according to the dispositionalist, they are: namely, dispositions of objects to appear coloured to certain kinds of perceivers in certain kinds of conditions. It might be added to this that we do not think of, or talk about, colours as if they were dispositions of objects to appear coloured to certain kinds of perceivers in certain kinds of conditions, either. If these claims can be substantiated, then the dispositional theory of colour can only be true at the expense of the—phenomenal, doxastic, and linguistic—appearances. Even if this does not rule out the dispositional theory entirely, it would nevertheless constitute a black mark against it.[1]

This paper develops a version of this general line of argument in response to recent work by Jonathan Cohen and Andy Egan. Cohen defends a relationalist theory of colour, according to which colours are mind-dependent relational properties constituted in terms of perceiving subjects and perceptual conditions (illumination and background); traditional dispositional theories are forms of relationalism, but relationalism itself is a generic theory that is independent of the specific details of dispositionalism. This theory of the metaphysics of colour is in turn combined with an account of the way that colours are represented in perception, thought, and language. According to Cohen, the basic form of colour ascription is essentially *subject-involving*.

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[1] Following Locke, dispositional theories are often defended in spite of the appearances. For instance, Johnston (1992) argues that colours cannot be identified with dispositional properties '*ever so inclusively speaking*', because colours do not look like dispositions to appear coloured. However, he argues that dispositional properties satisfy enough of the core common sense beliefs about colour to count as the colours 'less inclusively speaking'. Still, other things being equal, a theory of colour that is more inclusively speaking correct would be preferable to one that is less inclusively speaking correct.

That is, colour ascriptions are fundamentally of the form 'X is *F for S in C*', where 'X' refers to an object, 'F' is a colour predicate, 'S' refers to a subject or subjects, and 'C' picks out a set of perceptual conditions. Cohen does not think that colours are represented *as* dispositions to appear coloured, even though the precise form of relationalism he defends is a ('role-functionalist') form of dispositionalism; this is because psychological attitudes create highly intensional contexts in which co-referring terms cannot be substituted *salva veritate* (2009: 165). To this extent, there is at least limited mis-representation, or perhaps under-representation, of the nature of the colour.[2] However, the essentially relational nature of the colours is nevertheless reflected in the essentially relational form of colour ascriptions. In this respect, colours and colour representations are intended to walk in step.

In contrast, I will argue that standard colour ascriptions are essentially *subject-independent*, and have the basic form 'X is F', where again 'X' refers to an object and 'F' is a colour predicate. As such, I will argue that there is a fundamental tension between relationalist theories of colour and the way colours are represented. In Section 2, I argue against the claim that visual ascriptions of colours are subject-dependent. In Section 3, I argue against the claim that ascriptions of colour in thought and language are subject-dependent. Finally, Section 4 considers a related proposal by Egan, according to which colours are 'self-locating features' represented by 'self-locating contents'.

2. The Representation of Colour in Experience

Subject-involving colour ascriptions are representationally more complicated than subject-independent colour ascriptions. The claim that there is extra representational complexity to colour ascriptions therefore requires motivation.

One motivation for the claim that colour ascriptions involve an argument place for perceivers or perceiver-types is to avoid ascribing systematic error in the face of widespread divergences in perception and judgement.[3] Subjects perceive colours

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[2] Denying that colours are represented *as* dispositions to appear coloured allows Cohen to address the objection that the content of visual experience would be viciously regressive if colours are dispositional (or relational) properties, and represented as such (2009: 166-171). If colours *are* dispositions to appear coloured, and visual experiences are essence-revealing, then (by substitution of co-referring terms) 'John sees that the ball is red' is true iff 'John sees that the ball is disposed to appear red'. But as this involves a further occurrence of the term 'red', then (by substitution of co-referring terms) this is in turn true iff 'John sees that the ball is disposed to appear disposed to appear red', and so on *ad infinitum*.

[3] The question of whether experiences represent colours as subject-independent properties is orthogonal to the question of whether perceptual representations are in some sense egocentric. For instance, even if visual experiences represent objects in egocentric space, it is not generally assumed

differently depending upon a variety of individual and environmental factors. These perceptual differences in turn manifest themselves in differences in beliefs and utterances (at least amongst colour perceivers who are language users). In many cases of conflicting appearances—for instance, variations in the perception of unique hues amongst otherwise normal perceivers, or variations in the perceptual experiences of members of different species—there appears to no non-arbitrary reason to suppose that the experiences of one perceiver are veridical and their beliefs and utterances true, whilst the experiences of another are illusory and their beliefs and utterances false. Of course, the claim that there is no asymmetric error between subjects who ascribe different colours to the same objects is consistent with ascriptions of colour to physical objects being systematically false. But it would be more congenial if colour ascriptions were at least in general true. This is possible if experiences, beliefs, and utterances, ascribe to objects mutually compatible, relational, properties.

However, whether this is sufficient to motivate the claim that visual experiences ascribe subject-involving relational colour properties is questionable. One way of defending the requirement that colour ascriptions should be at least generally true, for instance, is by appealing to some form of principle of charity. As Egan puts it in arguing for the distinct (but related) view that visual experiences of colour and perceptual beliefs about colour have self-locating contents: 'Other things being equal, it is better to avoid attributing systematic error to the subjects and systems that one is interpreting' (2010: 77). But principles of charity are primarily principles of interpretation of rational agents, and it far from clear that they can be extended to visual systems in this way. Even if they can, principles of charity only require *minimizing inexplicable* error. The greater simplicity of subject-independent contents would provide one explanation of why visual experiences might not represent perceiving subjects, even if colours were mind-dependent relational properties.[4]

Indeed, it is tempting to think that subject-involving representations are simply redundant. According to Cohen, for instance, visual experiences of colour always include 'a relatively detailed specification of my visual system' (to fill out the 'S' in *is F for S*; 2009: 116). But it is difficult to see what the point of this specification would be

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that they represent shapes or sizes as mind-dependent properties.

[4] One way of approaching the question of which properties experience represents is to consider the perceptual processing mechanisms. Even if we cannot necessarily 'read off' the representational content of conscious visual experiences from the representational content of the sub-personal states that subserve them, the contents of visual experiences presumably bear some relation to the way that the retinal signal is processed by visual processing mechanisms. Is there any evidence from computational theories of vision that would support the attribution of relational colour ascriptions? Is there any reason to suppose ascriptions of this kind would have significant computational advantages?

given that we never visually perceive the world using *different* visual systems. By contrast, the reason why television channels often broadcast their logo in the corner of the screen is that it is possible to watch different channels, and they want to remind you which channel you are watching. Likewise, there is an obvious reason why visual experiences would represent salient features of the perceptual conditions, because these can, and do, change: we see objects under different illuminants, against different backgrounds, and from different positions. But allowing that visual experiences represent salient aspects of the conditions under which objects are seen—in addition to the objects and their properties—does not support a relationalist theory of colour, any more than allowing that visual experiences represent an object's angle of orientation or distance from the eye would support a relationalist theory of shape or size.[5]

The motivation of avoiding the ascription of widespread error also threatens to over-generalise, making *perceptual* error all but impossible. To avoid attributing the kind of asymmetric error that relationalism attempts to rule out, objects must be all (or at least most of) the colours that they appear to be. As such, errors must be primarily a function of belief and talk. On Cohen's account, for instance, perceptual experiences ascribe 'fine grained' colour properties, such as *is red for S in C*, where 'S' is 'a relatively detailed specification of my visual system' and 'C' is 'a relatively detailed specification of the circumstance I am in at the time' (2009: 116). In contrast, the colour properties ascribed in thought and language are typically 'coarse grained', such that 'S' and 'C' pick out general types of perceivers and perceptual conditions, where exactly which kind of perceivers and conditions is contextually determined.[6] Errors arise almost exclusively when someone believes or says that an object has a course grained colour, but unbeknownst to them either they or the conditions are not normal.[7]

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[5] It might be that in addition to objects, their properties, and salient facts about the perceptual conditions, we also need to include apparent properties (such as grey-in-this-light or elliptical-from-this-angle) within the content of experience, to account for the way that objects appear different as the perceptual conditions vary. But this still does not support the relationalist, if apparent properties are themselves mind-independent (Allen 2009b).

[6] The fine/coarse grained distinction therefore cross cuts the determinate/determinable distinction: visual experience can attribute fine grained determinable properties (e.g. 'yellow for me in C'), and we can ascribe determinate coarse grained colours ('unique green for normal perceivers in normal conditions') in thought and language (Cohen 2009: 110-111).

[7] The claim that perceptual error is (near) impossible because the senses are (near) infallible (at least with respect to colour) should be distinguished from the view that perceptual error is impossible because the senses are silent, and perceptual experiences are non-representational. This view raises other questions that I will not consider here.

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But this has seemingly counter-intuitive consequences. By way of illustration, consider cases of grapheme→colour synaesthesia. For someone with grapheme→colour synaesthesia, experiences of particular graphemes are reliably associated, at an intra-personal level, with particular experiences of colour. For instance, as Cytowic and Eagleman describe it:

> when a synaesthete sees a 6 printed in black ink, she it is black and sees it as black, but she also has the experience of greenness. That experience of green is automatic and involuntantary. For some…the color may have a location (say, super-imposed on the letter) (2009: 63).

Although the experience of perceiving something as both black *and* green is difficult to imagine, it can perhaps be compared to seeing an object reflected in a window whilst simultaneously seeing a different object through the window (this example is discussed in a different context by Matthen 2005: 272). The problem for the relationalist is that they seem committed to saying that the grapheme '6' *really is* both black and green for a synaesthetic subject in these conditions. But this doesn't seem especially plausible. The relationalist cannot say—which sounds more plausible—that '6' *is* black, but merely *appears* green to the synaesthete. For the relationalist, what it is to be green *just is* to appear green. To suppose otherwise would threaten to undermine the motivation for relationalism provided by the argument from perceptual variation: if we allow for a distinction between appearance and reality in this case, then it is similarly tempting to say that, say, a spinning Benham disk also merely *appears* chromatically coloured, or that a white wall under orange sodium street lighting merely *appears* orange.

It might be suggested instead that in this case the appearance can be non-arbitrarily written off as mere appearance, perhaps because it involves a deviant causal chain. For instance, in trying to make room for the possibility of perceptual error, Cohen considers the case of a telekinetic tomato that produces visual experiences by affecting the visual cortex directly, arguing that we do not need to suppose that the telekinetic tomato is the colour it (telekinetically) appears to be, because 'it's hard to see why these representations should count as *visual* if they can be brought about by non-visual (e.g. telekinetic) causal pathways' (2007: 341). Now, whether this account of the telekinetic tomato is itself plausible is questionable. One reason for thinking that the representations produced by the tomato are visual is that its telekinetic rays affect the *visual* cortex, and in so doing produce mental events that are phenomenologically and functionally indiscriminable from *visual* experiences; the telekinetic tomato differs in this respect from a telekinetic tomato that directly affects the auditory cortex and produces auditory experiences, or which by-passes the visual processing mechanisms entirely and directly produces beliefs about its colour. More

generally, labelling this causal process 'deviant' is liable to sound chauvinistic in a way that the ecumenical relationalist theory was supposed to avoid. But even if this account of the telekinetic tomato is plausible, it is unclear that the synaesthetic case can be dealt with in the same way, given that the causal processes involved synaesthetic experience are not plausibly abnormal in the same way.[8]

3. The Representation of Colour in Thought and Language

Settling questions about the representational contents of experience is notoriously difficult. One way of trying to get purchase on this issue is by considering the nature of the thoughts and linguistic utterances to which perceptual experiences give rise. But how colours are represented mentally and linguistically is important in its own right. Irrespective of how colours are represented in experience—indeed, irrespective of whether perceptual experience has representational content at all—how colours are represented in thought and language is itself a consideration to take into account in addressing the metaphysical question of what colours are: if we think of, and speak of, colours as mind-dependent relational properties, then this constitutes a reason in favour of the view that colours are mind-dependent relational properties, and a reason against the view that colours not mind-dependent relational properties; in contrast, if we do not think of, and speak of, colours as mind-dependent relational properties, then this constitutes a reason against relationalism, and a reason for a non-relational theory of colour. Here too there appears to be reasons for taking the canonical form of colour ascription to be subject-independent.

Consider ascriptions of colour in thought first. Perceptual experiences give rise to beliefs. We cannot necessarily read the content of perceptual experience off the content of belief. On the one hand, the content of experience might outstrip the content of belief, in the way it is often claimed that the content of experience is more determinate or more detailed than the content of beliefs. Conversely, background beliefs might 'inject' content into perceptually based beliefs that is absent from the experiences that give rise to them, in the way that it is sometimes claimed that natural kind properties (such as *being an elm*, or *being a greater spotted warbler*) are not themselves represented by visual experiences, but in conjunction with background beliefs and recognitional capacities visual experiences trigger perceptually based beliefs in which these properties are represented. As such, visual experiences could theoretically have subject-involving contents even if beliefs had subject-independent contents, or *vice*

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[8] Cohen also allows for perceptual error in cases of hallucination, when there is no object of the colour ascription (2007). But grapheme→colour synaesthetes at least do not hallucinate the objects that trigger their synaesthetic experiences.

versa. Still, the contents of perceptual beliefs at least provide a defeasible guide to the content of perceptual experience.

Perceptually based beliefs about colour appear, on the face of it, to be subject-independent. The main evidence for this is that beliefs are reported by linguistic utterances, and linguistic representations of colours themselves standardly appear, on the face of it, to be subject-independent. As before, we cannot simply read the content of a belief off the content of a linguistic utterance. It might be that beliefs have content that is not represented linguistically, or that the content of linguistic utterances outstrips the content of belief. As such, it could be the case that beliefs have subject-involving contents and utterances have subject-independent contents, or *vice versa*. Still, linguistic utterances at least provide a defeasible guide to the content of perceptual experiences. We typically say simply:

1) The apple is red.

rather than:

2) The apple is red for S in C.

The relationalist's account of the nature of colour can be aligned with the mental and linguistic representation of colour by adopting a contextualist semantics for colour terms (Cohen 2009). On this view, non-relational colour ascriptions like (1) are essentially incomplete, and the context supplies extra semantic material—including, crucially, a value for an additional parameter specifying 'perceiver type'. So, an unovertly relational utterance like (1) would really expresses a proposition like *the apple is red for S in C*—in much the same way as an unovertly relational utterance like:

3) The apple is to the left.

is usually thought to express a proposition along the lines of *the apple is to the left from here* (or *from this spatial location*, or *from me*). Consistent with the relationalist view that different types of perceivers perceive different mind-dependent relational properties constituted in terms of their varying psychological responses, the claim that non-relational colour ascriptions are incomplete can in turn be combined with the further claim that utterances ascribing colours express different propositions on different occasions of use.[9] So, in one context (1) might express the proposition *the apple is red for*

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[9] Not all relationalists need accept this further claim, if they think that there is a privileged class of

normal perceivers in normal conditions, and in another context an utterance of this sentence might express the proposition *the red is red for Keith (or perceivers of my very specific type) in these specific conditions*.[10]

However, there are reasons for doubting that a contextualist semantics of this kind adequately describes the ordinary use of colour terms. This is because colour terms appear to fail three standard diagnostic tests for the relevant type of context sensitivity. This leaves open the possibility of reforming colour discourse along contextualist lines; but this will be to concede that we do not ordinarily represent colours as relational properties in thought and language.

First, consider completeness tests for context sensitivity. When utterances are incomplete, it is usually possible to make explicit the extra semantic material supplied by context; indeed, incomplete expressions often 'cry out' for completion, as in the case of an utterance like:

4) The beach is nearby.

which can without hesitation be expanded to:

5) The beach is nearby to here.

However, it is debatable whether colour predicates have a parameter for 'perceiver type' that it is possible to make explicit in this way. As H.A. Pritchard puts it:

> we do not say—if we mean what we say—of a man who is colour blind that an object which others call blue *is* pink to him or to his perception, but that it *looks* pink to him (1909: 72 n. 1).

(presumably 'normal') perceivers and (presumably 'normal') perceptual conditions in terms of which colours are constituted, and that subjective responses not within this class are defective. However, such a view is difficult to distinguish from non-relationalist views according to which the privileged class of perceivers in the privileged set of conditions track properties that are constitutively independent of their experiences, and so I will not consider it further here.

[10] Context sensitive expressions might themselves be indexicals ('I', 'here'), have 'hidden' indexical expressions associated with them (expressions that would be represented at some level of linguistic representation), or else not correspond to anything explicit at the linguistic level but nevertheless be conceptually required for an utterance of a sentence to express a proposition (e.g. Cappelen and Lepore 2005: 8-9). I will not further discuss these options here, but assess just the general claim that colour ascriptions are context sensitive.

Underlying Pritchard's intuition is the thought that the expressions '*to*' or '*for*', followed by a noun phrase designating a perceiver or perceiver type, normally qualify expressions like 'looks', 'appears', or 'seems'. But these expressions serve to mark a contrast with 'is', and hence the perceiver type is not an argument of the colour predicate, as the contextualist semantics for colour terms requires. So, we might say of a white wall illuminated by orange light:

6a) The wall looks orange *to* me.
6b) The wall appears orange *for* me.
6c) The wall seems orange *to* me.

but here the contrast is with the (non-relational) colour the wall *really is*, as in:

7) The wall *is* white, but (merely) *looks* orange *to me*.

Similarly, we might say of someone who is blue-green colour-blind that the neutral wire in a plug '*looks* grey *to* him', where the implication is that the wire is nevertheless blue, as in:

8) The blue wire *looks* grey *to* John.

Alternatively, we might use a 'looks'-locution to register a doubt about an object's real colour, given our current epistemic situation, as in:

9) The wall *looks* orange *to me*, but in this light I can't be sure.

where the implication is that I cannot be sure that it *is* orange given how it *looks*. Yet in neither kind of case is the expression *to/for NP* a complement of the colour predicate.[11]

     Colour terms are similar to shape terms in this respect. It seems equally strange to say that a penny *is* elliptical *for* a perceiver viewing it at an oblique angle. When '*to*' and '*for*' are used in the vicinity of shape terms, they are more naturally taken to be complements of 'looks'-locutions, rather than hidden argument places of shape predicates, as in:

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[11] We also need to be careful that 'to me' and similar expressions express experiencer classes rather than comparison classes, as in 'Tall to me might not be the same as tall to you' (Glanzberg 2007, ms. 16, fn. 16). For further discussion of comparison classes, see the second diagnostic test for context sensitivity below.

10) The penny *looks* elliptical *to* the perceiver viewing it from an oblique angle, but it *is* really cylindrical.[12]

You might wonder whether it *has* to be possible to make explicit (in a well-formed sentence) the extra material that context supplies, if a term is semantically incomplete. For instance, Cohen thinks that explicitly unrelativised colour ascriptions like (1) *can* felicitously be rendered in an explicitly relative form like:

11) The lemon is yellow for the perceivers relevant in context K under the perceptual circumstances relevant to context K (2009: 119).

However, he nevertheless suggests that there might be overtly unrelativized predicates that express relational properties for which we are unable to make explicit the extra relatum. His example is:

12) John is a foreigner.

where

13) *John is a foreigner to the United States.

is ungrammatical (2009: 103). As it happens, this example is unconvincing. 'Foreigner' is a noun, and the corresponding adjective 'foreign' can felicitously be used in sentences which make explicit the relational nature of the property, as in:

14) John is foreign to the United States.

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[12] For similar reasons, it is debatable whether colour terms pass a related test for context sensitivity suggested by Wright. According to Wright, a 'basic indicator of folk-relativism [about ϕ] is its characteristic expression in ordinary discourse in cognates of the idiom: 'There is no such thing as simply being ϕ'' (2007, ms. 2). Wright gives as an example *looking red*: 'intuitively, there is no such thing as an object's simply *looking red*: something looks red, or not, in particular viewing circumstances' (2007, ms. 2)—to which we might also add, 'to particular perceivers or perceiver types'. But it is far from clear that the same is true of *being red*. Although 'looks red' takes a complement specifying a perceiver (type) or condition (type), 'is red' arguably does not, and as such the folk might seem much happier to say that there *is* such as thing as simply being red. (It is difficult to tell from the context whether Wright would agree, although as elsewhere he suggests that there is an analytic equivalence between being red and looking red, it is possible that he would not accept the distinction.)

But even if we cannot rule out the possibility of predicates that express relational properties where the relatum cannot be made explicit, this still would not undermine the ceteris paribus generalisation that the extra semantic material supplied by context can *normally* be made explicit, and so would not undermine the use of the completion test as a defeasible guide to context sensitivity.[13]

An alternative response to the claim that colour terms fail completion tests for context sensitivity is to question the strength of the evidence on which it is based. Linguistic intuitions about acceptability probably vary to some extent, and these linguistic intuitions might vary at least in part because they are infected by theoretical beliefs about the nature of colour. In particular, my guess would be that relationalists are more likely to find these constructions acceptable than non-relationalist.[14] (For this reason, testing the acceptability of these constructions on undergraduates, who are otherwise a readily available source of linguistic guinea pigs, is liable to be misleading, since relationalism (or something approximating it) is a commonly held philosophical positions amongst undergraduates.)

However, one explanation of why colour terms *might* fail completion tests for incompleteness comes from comparing colour terms with 'predicates of personal taste', like 'is fun' or 'is tasty'. For instance, on Glanzberg's (2007) contextualist account of the semantics of predicates of personal taste, utterances of sentences like 'Roller coasters are fun' or 'Chilis are tasty' are true in a context if the degree to which roller coasters are fun or chillies are tasty is higher than the contextually defined standards for fun or tastiness. This dovetails neatly with relationalist accounts of *fun* and *tastiness*, because the scale on which the contextually defined standards are set are essentially experiencer-involving: 'being fun' is associated with *enjoyment* to someone or class of people, and 'being tasty' is associated with a *gustatory quality* experienced by someone or class of people. Glanzberg argues that the main evidence for thinking that 'the semantics sees the experiencers' in this way is that 'adjectives of personal taste take complements of the form *for/to NP*' (2007, 14). I have suggested that it is debatable whether there is similar evidence that the semantics of colour predicates 'sees' colour perceivers. Here is one suggestion why. *Being fun* and *being tasty* are fairly naturally associated with subjective psychological responses—various kinds of

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[13] Compare Stanley in discussing contextualist theories of knowledge attribution: 'If the epistemic standards cannot be smoothly linguistically articulated, that should lead us to worry that they are not there' (2005: 69).

[14] Although it is perhaps interesting to note that Pritchard himself defends a version of a dispositional theory of colour, and despite his linguistic intuitions, also seems to think that this is more or less reflects common sense belief about colour. For further discussion, see Allen (2007).

enjoyment or pleasure. Visual experience of colour, in contrast, is transparent. If there are any colour sensations, then we are not typically aware of them as such: when we reflect on colour experience, we only appear to be aware of mind-independent objects, their properties, and relations. Given that visual experience is transparent, perhaps we ought not expect the semantics of colour predicates to involve an experiencer-involving scale in the way that the semantics of predicates of personal taste arguably does.[15]

A second diagnostic for context sensitivity is provided by the possibility of context shifts, in which different occurrences of a context sensitive term in a sentence take different values.[16] For instance, in a situation where you are in a zoo looking an elephant, and a butterfly flutters into view, you might conceivably utter:

15) That is a large butterfly, but that is not a large elephant.

This sentence can be true even though the elephant is obviously much larger than the butterfly, because the two occurrences of 'large' are associated with different comparison classes: the butterfly is large for a butterfly, and the elephant is small for an elephant (the example is from Stanley 2005: 58). Similarly, a notice on the car deck of a ferry might read:

16) Cars must not move while the ferry is in motion.

It is possible to follow this instruction because the car must both remain stationary, and move, relative to different frames of reference: the car must be stationary relative to the ferry, but be in motion relative to the river bank (the example is from Jackson 2007).

Colour terms appear to be context sensitive in roughly the same way: different occurrences of a colour term in a sentence can be associated with different comparison classes. For instance, in a Las Vegas hotel with a show featuring real

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[15] 'Predicates of personal taste' should be distinguished from 'taste predicates' ('is salty', 'is astringent', 'has a fruity finish'). It is further question whether a contextualist semantics of taste predicates is plausible. My own sense is that taste predicates are more like colour predicates than predicates of personal taste, and this is because gustatory experience, like visual experience, is transparent: *the fruity finish* appears to be a property of the wine, rather than my experience of it. However, I will not argue this point in detail here. Thanks to Barry Smith drawing my attention to this distinction.

[16] According to Stanley, this is because it is individual terms that are context sensitive, hence different occurrences of the same term in the same sentence should be able to take different values (2005: 57).

Siberian tigers, but where standards of cleanliness leave something to be desired, you might say:

17) That tiger is white, but the linen is not white.

This could be true even though the linen is obviously much whiter than the tiger, if what you mean is that the tiger is white for a tiger, and the linen is not white for linen in hotels. Similarly, we often use colour terms—like 'white', 'brown', 'black', 'blue', 'green', 'yellow'—to describe skin tones, even though the colour of the skin typically differs from paradigmatic instances of that colour.[17] If John becomes ill after eating some suspiciously coloured mushy peas, we might say:

18) John is green, but those peas are not green.

even if the peas are much greener than John's complexion. Of course, what we mean is that John's skin is green for skin, but that the peas are not green for peas.

But to say that colour terms are context sensitive in *this* way is not to say that colour terms are context sensitive expressions for which 'perceiver type' is a relevant parameter—any more than it would be to say that because shape terms can be used in relation to implicit comparison classes, then shape terms have an extra argument place for 'perceiver type', and thereby express mind-dependent relational properties. Indeed, it is difficult to think of uncontroversial examples in which the value of a putative perceiver type parameter could allow for context shifts. For instance, it would seem strange to say

19) ?The bucket is blue, but the spade is blue-green.

if the bucket and the spade are intra-personally indistinguishable in colour to Jack and Jill, but what is meant is that the bucket is blue for Jack, and the spade is blue-green for Jill. A potentially more plausible example is one in which you say to a colour-blind perceiver:

20) The grey ball is red.

But returning to Prichard's intuition, it far from clear that this is elliptical for a sentence in which the value of an implicit perceiver type parameter is shifted, as in:

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[17] Gärdenfors (2000: 120-122) suggests that the colour space for skin tones is a sub-region of colour space with roughly the same structure. Thanks to Mohan Mattern for the example.

21) The ball that *is* grey *for* colour blind perceivers *is* red *for* normal trichromatic perceivers

Rather, (20) looks more like a sentence in which a noun phrase designating a perceiver type is an argument of a 'looks'-expression, as in:

22) The ball that *looks* grey *to* colour blind perceivers *is* red.

This objection to the contextualist proposal about colour terms—that colour terms do not allow for the appropriate kinds of context shift—is similar to the objection to contextualist accounts of 'know' that so-called 'abominable conjunctions' should be acceptable if 'know' is context sensitive. For instance, if 'know' were context sensitive, then it should be possible to say:

23) I know that I have hands, but do not know I am not a handless brain in a vat.

where the standards required for knowledge shifts between the two occurrences of 'know'. Contextualists about 'know' sometimes try to deny the possibility of this kind of context shift by insisting that the epistemic standards in a discourse remain fixed. Similarly, a contextualist about colour terms might try to deny the possibility of shifting the value of the perceiver type parameter within a context (although contrast Cohen 2009: 120). Certainly not all context sensitive terms allow for this kind of context-shifting.

24) ?John is an enemy and Bill is an enemy, but they are not enemies of the same person.

for instance, sounds odd (Stanley 2005: 72, fn. 16; Cappelen and Hawthorne 2009: 49-50). Still, given that context sensitive terms *usually* allow for this kind of context shifting, this is again a further—if defeasible—reason for thinking that colour terms are not context sensitive expressions with an unarticulated parameter for perceiver type.

Finally, consider agreement and disagreement based tests for context sensitivity (Cappellen and Hawthorne 2009). Context sensitive terms do not generally sustain disagreement. So, if Peter says in one context:

4) The beach is nearby.

and Paul says in a different context

25) The beach is not nearby.

then it would often be wrong for Mary, in a third context, to say:

26) *Peter and Paul disagree about whether the beach is nearby.

In contrast, colour terms typically appear to sustain disagreement. So, for instance, if Peter says in one context:

1) The apple is red.

Paul in a different context says:

27) The apple is red-yellow.

then Mary can, in a third context, seemingly felicitously report that:

28) Peter and Paul disagree about the colour of the apple.

On the contextualist account, there will only be disagreement involving colour terms if the value of the putative perceiver-type parameter remains fixed. So, Peter and Paul will disagree if Peter's utterance expresses the proposition that *the apple is red for normal trichromatic perceivers in daylight conditions* and Paul's utterance expresses the proposition that *the apple is red-yellow for normal trichromatic perceivers in daylight conditions*. But there will be no disagreement if the perceiver-parameter shifts between contexts: for instance, if the proposition that Peter expresses is that *the apple is red for perceivers of my specific type in these precise conditions*, and the proposition that Paul expresses is that *the apple is red-yellow for perceivers of my specific type in these precise conditions*.

On Cohen's contextualist account of colour language, the relational properties that visual experiences represent are 'fine-grained'—and depend on precise nature and state of the perceiver's visual system and the environmental conditions—but in ordinary contexts the relational properties that ordinary thought and talk attribute to objects are relatively 'coarse-grained'. So, in normal circumstances, a sentence like (1) expresses the proposition that *the apple is red for the perceivers relevant in context K under the perceptual circumstances relevant in context K* (2009: 100), where the relevant perceivers and perceptual circumstances are understood as those that are, broadly speaking, statistically normal (2009: 120). But at the same time, Cohen wants to allow that

Lewisian 'mechanisms of accommodation' can bring it about that, in the same context, John can truly utter:

29) The apple is pure red.

and Jane can truly utter:

30) The apple is red-yellow.

This is because the contextually relevant perceivers and circumstances can shift from those that are statistically normal, to highly determinate sorts of perceivers and visual circumstances. So, for instance, in the context of disagreement about the unique hues, John can truly attribute to the apple the property *pure red for a perceiver with an instance of John's precise perceptual system type*, whereas Jane can truly attribute to the apple the property *red-yellow for a perceiver with an instance of Jane's precise perceptual system type* (2009: 117-121). But suppose that Jane utters instead:

31) No, John, the apple is not pure red, it is red-yellow.

Jane appears to be disagreeing with John. Yet Cohen's account seems to imply that Jane is saying that *the apple is not pure red for Jane, it is red-yellow for Jane*. If so, then Jane is not disagreeing with John at all, because John did not say that it was *pure red for Jane*. The same problem arises if Jane is interpreted as saying that the apple is not *pure red for a statistically normal perceiver*, as John did not say that either. Jane's utterance would only contradict John's if she said that the apple *is not red for John, it is red-yellow for Jane*. But this seems like an odd interpretation of Jane's remark. The mid-sentence context shift means that the final clause is a non-sequitor, as being *red-yellow for Jane* is compatible with being *pure red for John*. Moreover, the denial that the apple is *pure red for John* is inevitably going to be false—unless John is hallucinating or his experience is the result of a deviant causal chain, the only kinds of perceptual error that Cohen's account can accommodate.

One diagnosis of why colour terms fail agreement and disagreement based tests for context sensitivity is that agreement and disagreement *presuppose* a common faculty. As Cappelen and Hawthorne suggest, disagreement intuitions seem strongest where the folk are tempted 'to think that what is going on is poor performance of a sensibility that, when properly manifested, would converge on our judgements' (2009: 117). If there is no faculty of colour vision that is common to human colour perceivers, then this is somewhat surprising. We all now know that some colour-blind people are deficient with respect to the normal population. But despite often large differences in

discriminatory abilities, colour-blindness was only recognised and systematically diagnosed relatively recently; one of the main sources of impetus for the development of tests for colour blindness was the Lagerlunda train crash of 1875 in which an engineer mistook a red stop lantern for a white all-clear sign, leading to a collision between two trains that killed nine people (Mollon 2003). More subtle variations in colour perception are even less obvious. For instance, the discovery of the recently much-discussed variation in the perception of the unique hues requires psychological experiments conducted in controlled conditions; indeed, the very notion of a 'unique hue' is a relatively theoretical concept, that was controversial when proposed by Ewald Hering at the end of the C19th, and which gained greater currency after the discovery of neurophysiological mechanisms that appeared to realise hypothesised opponent-process channels (for discussion, see Allen 2011). Of course, reflection on these kinds of empirical discoveries *might* lead us to doubt that there is in fact a common faculty of colour vision that different perceivers share, and on this basis conclude that colours are relational properties constituted in terms of the psychological responses of perceiving subjects. But there is no reason to suppose that this relationality will be marked in our semantics prior to reflecting on these empirical discoveries.

4. Colour and Self-Locating Contents
A distinct, but related, account of the content of colour ascriptions has been proposed by Egan. According to Egan, the contents of colour experiences are 'centred world' propositions, as opposed to possible world propositions, that are correct or incorrect depending on a subject's 'location' (broadly construed) within a world, rather than being correct or incorrect depending on which possible world the subject is located at. In this respect, colour ascriptions are supposedly like attributions of geographically locational features such as *being nearby*, and contrast with attributions of properties like *being square*, which are insensitive to a subject's location in a world.[18] Specifically on Egan's proposal, colour ascriptions are veridical depending on whether the *subject* has a disposition to have certain kinds of experience in the presence of certain kinds of objects. So, for instance, Ted's experience of a red ball is veridical iff Ted is disposed to receive experiences with phenomenal property 'R' from the ball in normal conditions; equivalently, Ted's experience self-ascribes the property *being disposed to get an R sensation from the ball in normal circumstances* (2010: 88-9). This account of the content of colour ascriptions is turn combined with a view of colours as 'self-locating features'.

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[18] Possible worlds contents can be defined in terms of self-locating contents: possible worlds contents are simply *boring* self-locating contents, such that for each world, it includes all or no predicaments in it (Egan 2010: 85-86). However, I leave this qualification to one side in what follows.

This account of the nature of colour differs from traditional dispositional theories only in the dispositions in terms of which colours are constituted. According to the dispositionalist, what it is to be coloured is to be disposed to produce certain kinds of experiences in certain kinds of conditions. According to Egan, what it is to be coloured is for there to be a class of perceivers, of which the subject of experience is a member, who are disposed to receive certain kinds of colour experiences from that object in normal conditions. If this is not quite a form of relationalism, it is certainly a very close cousin.

This dual account of colours and colour ascriptions faces similar problems to more traditional dispositional theories. Assuming that the contents of psychological states are specified by their accuracy conditions, then this account of the content of colour ascriptions is somewhat surprising, to say the least; it is tempting to say that if colours don't look like dispositions to appear coloured to normal perceivers in normal circumstances, then they certainly don't look like dispositions of a class of perceiving subjects, of which I am a member, to get certain kinds of sensations from certain kinds of objects in normal circumstances. Alternatively, the suggestion might be that the contents of psychological states are distinct from their accuracy conditions, so that a visual experience of a red ball could have the content that *the ball is red*, but nevertheless be veridical just in case the subject of the experience is disposed to receive experiences with phenomenal property 'R' from the ball in normal conditions. Even so, there are problems with Egan's account.[19]

Given the lack of explicitly relational colour concepts, there is no evidence that colour ascriptions are more like ascriptions of proximity than ascriptions of shape. Sentences, like (4), which ascribe properties like *being three feet away* require completion: it needs to be said from whom, or from where, something is three feet away. But as we have seen, it is controversial whether ascriptions of properties like *being blue*—as opposed to *looking blue*—can be felicitously completed by specifying to whom the object *is* unique blue (as Egan himself acknowledges, 2010: 92).

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[19] The claim that visual experiences self-ascribe dispositional properties is perhaps more naturally taken as a claim about the *content* of experience, not just its accuracy conditions; hence Egan's concern (which he thinks is ultimately unfounded) with the objection that attributing self-locating contents to perceptual experience might require 'overly fancy explicit self-representation' (2010: 93). Compare Capellen and Hawthorne's objection to Egan's use of self-locating contents to provide an account of epistemic modals: 'Taken at face value, belief and saying attributions look as though they describe relations between people and the complements of that-clauses. The latter do not seem to belong to the category of property-expressing constructions. The first challenge for proponents of the property-based account is to justify attributing such (apparently) bizarre logical forms to belief and saying reports' (2009: 51).

The motivation for Egan's account is also questionable. The view of colours as self-locating features is intended to satisfy four desiderata: that features attributed by apparently contradictory experiences (e.g. *chip 17 is unique green* and *chip 17 is greenish blue*) are genuinely incompatible ('Incompatibility'); that it is not the case that one experience is correct and the other is incorrect ('No Asymmetric Error'); that the qualities attributed are such that 'their attribution is traceable to features of the subject's particular sensory apparatus in a way that attribution of other sorts of qualities is not' (2010: 75) ('Projection'); and the features attributed by apparently contradictory experiences (e.g. *unique green* and *greenish blue*) are both correctly attributed ('Correctness').

I raised some concerns about Egan's appeal to principles of charity to motivate Correctness in Section 2. But the main problems are with the desiderata Incompatibility and Projection. Incompatibility is supposed to allow for the possibility of disagreement, and in this respect Egan regards his proposal as more successful than the relationalist's. As Egan understands it, Incompatibility requires that 'One could not have a veridical experience that attributed [two self-locating features]…to the same object' (2010: 74). So, for instance, my experience could not correctly represent both that *I am disposed to receive R sensations from the apple in normal circumstances* and *I am disposed to receive RY sensations from the apple in normal conditions*. But so construed, Egan's account does not itself yield Incompatibility. Consider again a case of grapheme→colour synaesthesia where experiences of the grapheme '6' are reliably associated with experiences of green. In this case, it looks as though Egan is committed to saying, contrary to Incompatibility, that the synaesthete's experience veridically represents seemingly incompatible features of the same object, since the synaesthete is both disposed to receive black sensations from the grapheme '6' in normal circumstances, and to receive green sensations from the grapheme '6' in normal circumstances. Moreover, Egan cannot avoid this problem by localising the sensations received to different regions of the visual field (as he suggests as a way of avoiding problems with deviant causal chains in his 2006), because the green can be seen as occupying the very same location in the visual field as the grapheme. So in respect of Incompatibility, it is not clear that Egan's proposal is any better than the relationalist's, which will yield incompatibility at least in the sense that different subjects will often represent different properties (cf. Egan 2010: 79).

The main advantage of his proposal that Egan advertises is that it satisfies Projection, which he describes as a 'potentially attractive thought' (Egan 2010: 68). However, there is surely something odd about taking Projection as a desideratum of a theory of colour. Projection does not plausibly reflect folk intuitions about the nature of colour and colour experience; insofar as Projection is a potentially attractive thought, it is a potentially *philosophically* attractive thought. At the very least, this

principle therefore does not have the same status as the core common sense beliefs against which theories of colour are often judged (e.g. Johnston 1992). Moreover, as the *denial* of Projection is also potentially philosophically attractive, a theory that satisfies Projection is not obviously better than one that doesn't.

Besides, the analogy that Egan draws between proximity and colour doesn't really support the projectivist thought anyway; it sits much better with what Egan describes as the 'filterist' (or 'selectionist') alternative according to which 'the "projected" bits of perceptual content are still instances of content that is there as a result of openness to objective facts about the world—it is just that different ones of us are perceptually open to different bunches of objective facts' (2010: 80). This is because although the property of *being nearby* might not be fully objective, it is not simply 'projected onto objects': it is not that this property is ascribed 'on account of the features of the perceivers and their perceptual apparatus, not on account of objective features of the things perceived' (Egan 2010: 75). Whether or not something is nearby depends on our respective geographical locations, and facts about geographical locations are hardly mind-dependent. Following through the analogy would lead us to suppose that *being coloured* is not fully objective either, given that different subjects can perceive colours differently. Nevertheless, this does not mean that colours are self-locating features that are partly constituted by the experiences of certain kinds of subjects. Instead, the type of visual system a particular subject has determines which mind-independent properties are *available* to be perceived: although capacities to perceive different properties are subject-dependent, the properties that they are capacities to perceive are subject-independent (compare Kalderon 2008, Allen 2009a). So even *if* we accept that colour ascriptions attribute self-locating features, it still wouldn't support the relational view that colours are mind-dependent.

5. Conclusion

Consideration of the way that colours are represented in perception, thought, and language presents a problem for relationalist theories of colour according to which colours are constituted in part by the experiences of perceiving subjects. If the appearances—perceptual, doxastic, and linguistic—are to be saved, then colours must be non-relational, mind-independent, properties. Whether the appearances can be saved will depend on whether the arguments for relationalist theories of colour are successful. But at least colours do not look like mind-dependent relational properties— and nor do we think about them, or speak about them, as such.[20]

References

Allen, K. 2007. The Mind-Independence of Colour, *European Journal of Philosophy* 15: 137-158.

— 2009a. Inter-Species Variation in Colour Perception, *Philosophical Studies* 142: 197-220.

— 2009b. Being Coloured and Looking Coloured, *Canadian Journal of Philosophy* 39: 647-667.

— 2011. Revelation and the Nature of Colour, *dialectica* 65: 153-176.

Cappelen, H. and Hawthorne, J. 2009. *Relativism and Monadic Truth*. Oxford: Oxford University Press.

Cappelen, H. and Lepore, E. 2005. *Insensitive Semantics*. Oxford: Blackwell.

Cohen, J. 2007. A Relationalist's Guide to Error About Color Perception, *Noûs* 41: 335–353.

—2009. *The Red and the Real*. Oxford: Oxford University Press.

Cytowic, R.E. and Eagleman, D. 2009. *Wednesday is Indigo Blue*. Cambridge, Mass.: MIT Press.

Egan, A. 2006. Appearance Properties? *Nous* 40: 495-521.

—2010. Projectivism Without Error, in B. Nanay ed. *Perceiving the World*. Oxford: Oxford University Press.

Gärdenfors, P. 2000. *Conceptual Spaces*. Cambridge, Mass.: MIT Press.

Glanzberg, M. 2007. Context, Content, and Relativism. *Philosophical Studies* 136: 1-29.

Jackson, B. 2007. Truth vs. Pretense in Discourse About Motion (or, Why the Sun Really Does Rise), *Nous* 41: 298-317.

Kalderon, M. 2007. Color Pluralism, *Philosophical Review* 116: 463-501.

Matthen, M. 2005. *Seeing, Doing, and Knowing*. Oxford: Oxford University Press.

Mollon, J. 2003. The Origins of Modern Color Science, in S. Shevell ed. *The Science of Color*. Oxford: Elsevier.

Prichard, H.A. 1909. *Kant's Theory of Knowledge.* Oxford: Clarendon Press.

Stanley, J. 2005. *Knowledge and Practical Interests*. Oxford: Clarendon Press.

Wright, C. 2007. Relativism about Truth Itself: Haphazard Thoughts about the Very Idea, in M. Garcia-Carpintero and M. Kolbel eds. *Relativising Truth*. Oxford: Oxford University Press.