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True colours (Tye)

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Authors
Cohen, J
Hardin, C L
McLaughlin, B P

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True Colours

Jonathan Cohen, C. L. Hardin, and Brian P. McLaughlin*

1 Multiple Choice Pop Quiz

(Tye 2006) presents us with the following scenario: John and Jane are both standard human visual perceivers (according to the Ishihara test or the Farnsworth test, for example) viewing the same surface of Munsell chip 527 in standard conditions of visual observation. The surface of the chip looks "true blue" to John (i.e., it looks blue not tinged with any other colour to John), and blue tinged with green to Jane.[1] Tye then in effect poses a multiple choice question.

> CHOOSE ONE OF THE FOLLOWING ANSWERS: John's and Jane's colour experiences of the surface are such that (a) they both veridically represent the surface (b) one veridically represents the surface and the other doesn't (c) neither veridically represents the surface.

Answers (a)–(c) exhaust logical space.

Tye rejects (a) on the grounds that no surface can be both true blue and blue tinged with green at the same time.[2] He rejects (c) essentially on the grounds that it is implausible that no standard human visual perceiver in such a circumstance would veridically experience the surface. (It seems that we're supposed to be making the simplifying assumption that in such standard conditions of observation the surface will either look true blue or look blue tinged with green to a standard human visual perceiver.) He acknowledges that (b) has prima facie difficulties too. It can seem arbitrary to count one of Jack and Jane as veridically experiencing the surface and the other as not. Thus, each answer in logical space has prima facie costs; and therein, he says, "lies the real puzzle

*This work is fully collaborative; the authors are listed alphabetically.

[1] Although we follow Tye's description of the scenario here and in what follows, we warn that his terminology is non-standard and potentially misleading. First, although Tye uses the locution 'true blue' for rhetorical purposes (namely, to play on the association between 'true' and 'real'), the more standard (and theory-neutral) term would be 'pure blue'. Second, Tye uses non-standard labels for Munsell chips; a chip that satisfies the description in his text is (in the standard specification) 2.5PB 5/12 (cf. (Kuehni 2004)).

[2] Of course, proponents of answer (a) would agree. They would say that the surface is both true blue for John in the circumstance in question and blue tinged with green for Jane in the circumstance in question; but they would not allow that anything is true blue full stop or blue tinged with green full stop.

of true blue" (2). But it is his position that (b) is the most plausible answer. Either John or Jane is non-veridically experiencing the surface.

2 Tye on True Blue

Unfortunately, Tye makes no attempt to address defenses either of answer (a) or of answer (c).[3] Moreover, he fails to offer those of us who are skeptical of answer (b) any reason to believe it. What he does instead is compare two different answers, each consistent with (b), to the following pressing question: how is it that a surface can look different in colour to two human perceivers (John and Jane) when both are standard perceivers and in standard conditions of visual observation?

2.1 Biting the Bullet

The first answer Tye considers (what he calls the "Biting the bullet" solution) is that a standard perceiver can have a malfunctioning colour detection system. He tells us that Mother Nature equipped humans (and many other species) with systems for detecting colours in certain conditions. He calls the conditions in question (for the species in question) "Normal conditions," and calls colour detection systems that operate in accord with their natural (Mother-Nature-assigned) function, "Normal systems." According to the first answer, then, every humanly experiencable colour C is such that if something is C, then someone with a Normal colour detection system viewing it in Normal conditions will experience it as C. Thus, for example, if something is blue tinged with green, then those of us with Normal colour detection systems viewing it in Normal conditions will experience it as blue tinged with green (it will look to us blue tinged with green).

Now, we have imagined that the chip looks true blue to John while it looks blue tinged with green to Jane. If John and Jill are in a Normal condition of observation, then either John or Jill falls short of having a Normal colour detection system; the colour detection system of one or the other of them is to some extent abNormal. Therefore, one way in which option (b) in the multiple choice test could be correct would be that either John or Jane has a visual system that is abNormal, despite the fact that they are both standard perceivers (both by ordinary standards and by extant scientific tests).

Although Tye thinks that this "Biting the bullet" position may be correct (3), he doesn't endorse it. He remarks,

[3] In a footnote Tye says something relevant to the prospects of answer (a). He claims that many of the best worked out (a) type answers are viciously circular, insofar as they propose to understand understand *blue* in terms of *looks blue*. Unfortunately, he does not mention any of the responses to this worry that have appeared in the recent literature (e.g., (McLaughlin 2003), (Lewis 1997), (Cohen 2003), (Cohen 2004)), and does not say why he thinks they fall short. In any case, this does not seem to be Tye's main concern in the paper, so we'll put it aside.

> ...surely there is no one specific determinate background and no one specific determinate set of lighting conditions against which colour vision evolved. And with the variability in background and variability in lighting conditions, all within the range of the Normal setting, objects do not always look the same determinate shade of colour (4).

This consideration leads him to seek an alternative account of how it is that a surface can look different in colour to two human perceivers when both count as standard perceivers and in standard conditions of observation.

2.2 Tye's Alternative

Tye's alternative answer draws on a distinction he makes between "coarse-grained" and "fine-grained" colours.[4] He proposes that, although our colour detection systems are reliable with respect to the detection of coarse-grained colours such as blue, they are unreliable with respect to the detection of more fine-grained colours such as true blue and blue tinged with green. The reason for this, he says, is that although there was a selective advantage in being able to visually detect coarse-grained colours, there was no selective advantage in being able to visually detect fine-grained colours.

This provides Tye with the materials for his alternative explanation of how it is that a surface can look different in colour to two perceivers both of whom count as standard and in standard conditions of observation. Namely, the surface can look different fine-grained colours to such observers. That can happen, he says, because although Mother Nature endowed us with systems to detect coarse-grained colours, She did not endow us with systems to detect fine-grained colours.

Tye points out that both John's experience and Jane's experience represent the chip as blue. And, he supposes, the chip is indeed blue. So both John's and Jane's experience get the coarse-grained colour of the chip (viz., blue) right. Of course, it is also the case that John's experience represents the chip as true blue and that Jane's experience represents the chip as blue tinged with green. And Tye assumes that the chip is either true blue or blue tinged with green. But since Mother Nature did not endow us with colour detection systems designed to detect such fine-grained colours, even knowing all of the relevant facts about the evolutionary history of our species would not enable us to determine whether (as luck would have it) John's experience veridically represents the chip as true blue or whether (as luck would have it) Jane's experience veridically represents it as blue tinged with green.[5] Indeed, he tells us, "God knows which hue chip

[4]Tye doesn't explain his coarse-/fine-grained distinction. There is a hierarchy of determinables and determinates for each hue. Tye seems simply to count as coarse-grained colours that are at the level, in their respective hierarchies, of blue; presumably this includes colours such as yellow, red, green, orange, and purple.

[5]In a final footnote, Tye responds to the additional worry that his alternative solution, in being committed to the lack of a selective advantage to detecting fine-grained colours, is incompatible with the evolutionary psychosemantics of colour experience he favors ((Dretske 1995), (Tye 1995), (Tye 2000), (Byrne and Hilbert 2003)). Although we believe these two

527 is, but we may very well never know. Our only access to the colours of things is via a single sense and the colour detectors nature has endowed us with are limited" (5).

3 Not So True Blue

Unfortunately, we do not believe that either of the solutions Tye considers is defensible.

We are highly dubious about the Biting the bullet solution because we find it deeply implausible that whenever a surface looks different in colour to two standard perceivers in standard circumstances, at least one of them has a malfunctioning visual system (see (Hardin 1988)).

Moreover, Tye's alternative solution fares no better. The reason is that it depends on assuming that all variation in colour experience among standard perceivers in standard circumstances is at the level of fine-grained hues. That assumption is false: there is in fact variation in colour experience among standard perceivers in standard circumstances even for colours at the level of grain of blue, purple, orange, and the like. For example, in a recent colour-naming study with 34 hue samples and eight colour categories, seven hue samples were labeled blue by at least one subject, but there was 80% consensus on only two ((Malkoc, Kay, and Webster 2005)). All seven samples were assigned to coarse-grained colours other than blue at least once. Examination of figure 4 of (Malkoc, Kay, and Webster 2005) shows that this degree of overlap was characteristic of all of the coarse-grained categories.[6]

This shows that there are surfaces that look blue to some standard human perceivers in standard circumstances and that do not look blue to other standard perceivers in standard circumstances, but instead look purple. (Similarly, there are surfaces that look yellow to some standard perceivers in standard conditions of observation and do not look yellow to other such perceivers in such conditions, but instead look orange.) The only responses to this result that are available to Tye are either to appeal to a level of grain that is even coarser than that of blue (purple, yellow, orange, etc.) or else abandon his suggested alternative position altogether. We maintain that the first option is deeply implausible and entirely ad hoc.

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views of Tye's are incompatible (despite what he says in the footnote), we pass by this matter since Tye does not presuppose his psychosemantic theory in the paper under discussion.

[6]Two remarks about these results are in order. First, although some of the overlap with blue in (Malkoc, Kay, and Webster 2005) is with a category they call "blue-green," this is not the same as Tye's "blue tinged with green." Their blue-green is not a subcategory of blue, but a coarse-grained alternative to blue (analogy: orange is a coarse-grained alternative to red). Second, the coarse-grained categorical variation under discussion is perceptual, rather than lexical, categorization, and so cannot be understood as the result of the vagueness of colour terms. We know this because some of this variation arises in experiments that don't involve naming at all, and has its source in genetically based differences in cone photopigments (cf. (Neitz and Neitz 1998)).

University of California, San Diego
9500 Gilman Drive
La Jolla, CA 92093-0119
joncohen@aardvark.ucsd.edu

C. L. Hardin
Syracuse University
541 Hall of Languages
Syracuse, NY 13244-1170
chardin1@twcny.rr.com

Brian P. McLaughlin
Rutgers University
26 Nichol Avenue
New Brunswick, NJ 08901-1411
brianmc@rci.rutgers.edu

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