Diana Raffman (2005) emphasizes a useful and important distinction that deserves heed in discussions of phenomenal consciousness: the distinction between *what it's like to see red* and *how red things look*. (Two alternative locutions that also can express the latter idea, we take it, are “what red looks like” and “what red is like”.) Raffman plausibly argues that this distinction should be incorporated into theories of phenomenal consciousness, including materialist theories – in particular, into the materialist theory we focused on in Graham and Horgan (2000), Michael Tye’s PANIC theory. She also argues that incorporation of the distinction into Tye’s theory provides the basis for a plausible reply on Tye’s behalf to our “Mary Mary” version of the knowledge argument against materialism. We agree that Tye would do well to incorporate the distinction, as would advocates of other theories of phenomenal consciousness. But in our view, doing so ultimately does not help fend off the Mary-Mary argument.

Raffman argues that knowing what it’s like to see red is a derivative matter, involving introspective attention to one’s experience of seeing red. She suggests that the more fundamental state is knowing how red things look. She writes:

What I want to suggest ... is that we view Mary’s new knowledge as deriving almost entirely from her perceptual representations ... That is to say, we ought to view her new knowledge as deriving not from introspection or from higher-order consciousness, but from perception or phenomenal consciousness. I will say that the primary object of Mary’s learning is not *what it’s like to see red*, but rather *how red things look* ... Mary learns how red things look whether or not she introspects ... *How red things look* is learned by perceiving; *what it’s like to see (look at) red* is learned by introspecting ... I submit that there is a robust sense in which any organism...
that visually represents red and can recognize red things by looking at them knows how red things look; and any organism that visually represents red and can discriminate red from other shades of red by looking at them knows how red things look – whether or not it is capable of introspection.¹

We are prepared to grant everything that Raffman says in this passage – not only for the sake of argument, in the present dialectical context, but also because it all seems correct. (At any rate, we grant everything she says insofar as the organisms she is talking about all are supposed to have visual red-experiences that are phenomenally like those of normal humans.)

We would add this. Learning how red things look, and thereby knowing how red things look, evidently are not a matter of learning-that or knowing-that. After all, certain creatures – including severely cognitively impaired humans – could learn how red things look, and thereby could know how red things look, even if they are not capable of beliefs proper to the propositional attitudes of learning- and knowing-that. Nor are such learning and knowing merely a matter of learning-how or knowing-how – say, learning how, and thereby knowing how, to discriminate red things from non-red things. Rather, they are a matter of acquaintance with how red things look. Learning how red things look is becoming acquainted with how they look, and knowing how red things look is being acquainted with how they look. (The word “know” clearly has an acquaintance-use in English, as in ‘Having met your sister but not your brother, I know her but not him’. The same is true of “learn”, as in “I have learned her face well”.) The associated knowing-that state, expressible linguistically for example by way of an indexical statement like “Ah, red things look like this”, is derivative from the more basic acquaintance-state – viz., the state of visual acquaintance with how red things look.²

We would also add this. The most fundamental kinds of states insofar as color phenomenology is concerned are experiences of what red things look like. Although one can know what red things look like – in the sense of being acquainted with this look – even when one is not currently experiencing the look of red things, this acquaintance-state is itself grounded in such experience-states. Likewise, learning what red things look like –
in the sense of becoming acquainted with this look – is constituted by *first experiencing* this look. This may be put by saying that if you are to know what red things look like – in the sense of being acquainted with this look – you need to have had your red channel actively turned on by (or have had your red-green channel actively differentially tuned for red by) visual exposure to red things. Acquaintance-capture of what red things look like is only available in the first person.

But even with all of these points granted and taken on board by a suitably elaborated version of Tye’s theory of phenomenal consciousness (the *elaborated theory*, as we will henceforth call it), our Mary-Mary version of the knowledge argument still can be deployed against the elaborated theory, and is no less telling than it was before. The modified argument should now be primarily directed at two aspects of the elaborated theory: (1) its account of states like *experiencing how red things look*, and (2) its account of the phenomenal concepts that that are deployed in, and whose possession depends upon, having such experiences. Briefly stated, the reasoning goes as follows.³

Recall that Mary Mary is the daughter of Jackson’s original Mary. She is like her monochromatic mother in all relevant respects, and has not yet had color experiences; she also thoroughly understands, and firmly accepts, Tye’s theory of phenomenal consciousness. We now add this: she thoroughly understands, and firmly accepts, the elaborated version of Tye’s theory that incorporates (1) Raffman’s distinction, (2) our own observation that learning and knowing how red things look are fundamentally a matter of visual acquaintance rather than learning-that or knowing-that, and (3) our own observation that such acquaintance is itself grounded in experiences of how red things look.

When Mary Mary contemplates a post-monochromatic mental life for herself, what changes can she reasonably respect? She expects to undergo certain visually generated PANIC states she has never undergone before, states that supposedly constitute experiences of how red things look. Since she thoroughly understands the functional-representational
role of these states, she expects them to play such a role in herself. In particular, she expects to acquire, on the basis of these PANIC states, certain new discriminatory and recognitional capacities vis-à-vis colors – those very capacities whose implementation by the PANIC states supposedly constitutes a person’s possession of the relevant phenomenal concepts.

But should Mary-Mary, while still in her monochromatic situation and still an ardent believer in the elaborated theory, expect to be surprised by how red things look? Should she have good reason to expect novel or unanticipated delight at how red things look, over and above any anticipated delight she might expect to arise purely from the acquisition of the new discriminative and recognitional capacities themselves? No, she should not. To make this clear, let us consider in turn (1) the state-type experiencing how red things look (a PANIC property, according to the elaborated theory), and (2) the cognitive capacities whose implementation by such PANIC states constitute (according to the elaborated theory) possession of the relevant phenomenal concepts.

First, the elaborated theory says that the state-type experiencing how red things look is identical to a certain PANIC property. What is psychologically significant about this property is just the functional/representational role it plays in human cognitive economy – something that Mary Mary thoroughly understands already, by virtue of her scientific omniscience. Its functional/representational role involves the various behavioral, discriminative, recognitional, and classificatory capacities that the PANIC state subserves – including the capacities whose implementation by this state constitutes (according to the elaborated theory) the deployment of phenomenal redness-concepts, both predicative and indexical. Mary Mary also thoroughly understands how this PANIC property is neurophysically implemented in normal color-perceivers, and thus how it will be neurophysically implemented in herself once she leaves her monochromatic environment. No expected surprises, then, with respect to the nature of the PANIC property itself, the one that supposedly constitutes experiencing what red things are like.
Second, what is psychologically significant about the relevant phenomenal concepts (given the elaborated theory) – the indexical and predicative redness-concepts – is that they are capacity-based concepts. I.e., these concepts are constituted by discriminatory/recognitional capacities, implemented by redness-representing PANIC states, vis-à-vis red things, vis-à-vis the property of redness, and (derivatively, via introspective application) vis-à-vis redness-representing PANIC states themselves. But Mary Mary already understands these capacities thoroughly, including how redness-representing PANIC states subserve them, even though she does not yet possess the capacities herself (because she has not yet instantiated the PANIC states). No expected surprises here either, with respect to the nature of the phenomenal color-concepts that she does not yet possess.

So Mary Mary, as a True Believer in the elaborated theory, evidently has no good theoretical reason to expect surprise or unanticipated delight upon being released from her monochromatic situation. After all, she thinks she understands well the nature of the state experiencing how red things look, even though she has not yet undergone this state: it is a specific PANIC property, and her theoretical knowledge about it is exhaustive. She also thinks she understands well the nature of phenomenal color-concepts that are deployed when the state experiencing how red things look is instantiated, even though she does not yet possess these concepts: they are capacity-based concepts whose possession is a matter of the relevant PANIC property (which she thoroughly understands) implementing the relevant discriminatory-recognitional capacities (which she thoroughly understands) vis-à-vis the relevant physical property that she believes is identical with redness. She expects to undergo such PANIC states when she leaves her monochrome environment, and she expects these states to implement capacities of visual discrimination and classification that she does not now possess. None of this should surprise her, or cause her unanticipated delight beyond whatever moderate delight she anticipates merely from possessing and exercising the newly acquired capacities themselves. And there is nothing
else to expect, based on her scientific omniscience and her acceptance of the elaborated theory.

But surely she will be surprised and delighted, upon begin-nning to experience how red things look. What will surprise and delight her when she undergoes this experiential state – or should – is precisely how red things look. She had no rational grounds for expecting this amazing and delightful look-property to be visually presented to her, the actual look of red things that she is now experiencing. So the elaborated theory should now strike her as quite mistaken, because it evidently leaves out visual experiences in which this remarkable look-property, apparently instantiated by certain external objects, is visually presented.

Two points should be stressed about this version of the Mary Mary argument that we have here directed against the elaborated theory. First, the new argument makes no appeal to introspection, or to what it’s like to see red; rather, it focuses instead on what red looks like. The argument thereby respects Raffman’s contention that “in its use of phenomenal concepts, introspection piggybacks on perception” (p. 10). Second, the current version of the Mary Mary argument potentially poses a challenge not only to materialist theories of phenomenal consciousness (with the elaborated version of Tye’s theory as a representative sample), but also to materialist theories of color itself. If external physical objects really have the color properties that visual experience presents them as having, then the rational appropriateness of Mary Mary’s surprise and delight, upon undergoing visual presentations of these properties, provides grounds to doubt whether such properties themselves can be incorporated into materialist ontology. (This in turn provides grounds to doubt whether external objects really do instantiate color-properties at all. We take it that eliminativism about colors is a credible theoretical option, even though eliminativism about color-presenting experiences is not.)

Toward the end of her paper, Raffman argues that even under the revised or elaborated theory, what Mary Mary learns when she leaves her monochrome environment is sufficiently nontrivial that it is rational for Mary Mary to be surprised. She
offers three considerations in defense of this claim. We want to address these. She writes:

First, ... learning how red things look consists in forming certain mental representations. In particular, if acquiring a (recognitional/discriminatory) capacity does not involve forming a new representation, then learning how red things look does not consist merely in acquiring a new capacity. (15)

But the trouble is that, according to the elaborated theory, although learning how red things look does consist in forming certain new mental representations, such representations are identical to states (viz., PANIC states) whose constitutive functional/representational role and whose neurophysical implementation are already thoroughly understood by Mary Mary; their constitutive role primarily involves subsuming the relevant recognitional/discriminatory capacity. It is hard to find anything here to be rationally surprised about. Raffman continues:

Second, before her release and medical procedure, Mary is unable to form the representations in question; so they are genuinely new. (15)

But the trouble is that undergoing new representational states that she could not previously undergo is nothing unexpected, and is not what Mary Mary finds so surprising and delightful. Her surprise and delight, rather, are about what red things look like. Raffman further continues:

Third, these representations are fundamentally perceptual representations: they are perceptual experiences (PANIC states) and perceptual, i.e., phenomenal, concepts. Thus they make available new perceptual modes of presentation of a physical property (a certain reflectance triple, according to Tye) of which Mary already has exhaustive physical-theoretical knowledge. Knowing red under perceptual modes of presentation – knowing how red things look – seems nontrivially different from knowing it under a physical-theoretical mode of presentation. (15)

But again, the trouble is what allegedly constitutes knowing red under perceptual modes of presentation, according to the elaborated theory. All this amounts to, under that theory, is undergoing certain internal states (PANIC states) whose functional role and physical implementation are thoroughly understood in advance by Mary Mary, and whose functional
role primarily is a matter of subserving certain visual recogni-
tional/discriminatory capacities. Since Mary Mary completely
understands in advance everything that supposedly constitutes
knowing red under perceptual modes of presentation, her
acceptance of the elaborated theory leaves her with no rational
basis to be delighted or unexpectedly surprised when she first
learns what red things look like. But clearly these reactions are
rationally appropriate – a fact that therefore strongly chal-
lenges the elaborated theory itself.

In closing we note the following: Perhaps there is a tempta-
tion to confuse whether Mary Mary would be surprised on
release with whether she has good reason to be surprised if the
elaborated theory she holds is true, i.e., whether surprise would
be rationally appropriate given that Tye’s theory plus Raff-
man’s refinement is correct. But it is of course important to
distinguish being surprised from its being rationally appro-
piate to be surprised. To illustrate the distinction: One of us had a
colleague who saw the movie *The Crying Game* twice. The
movie contains, for unfamiliar viewers, a surprise. A character
early depicted in the film as a sexually desired woman, turns out
(when his genitalia are nakedly exposed) to be a man. When the
colleague was asked why he saw the movie twice, he jokingly
quipped, “I like being surprised”.

The joke, of course, is that the same surprise should not
occur twice. Surprise somehow might occur twice, but its sec-
ond occurrence is rationally inappropriate. Having known that
the “woman” is a man, having been, as it were, “acquainted”
with the actor’s sexual anatomy, this should not be a surprise
on second viewing. Good reason for being surprised has
evaporated.

Tye’s theory might predict or tell Mary Mary that were she
to be released from her monochromatic chambers, novel color
experiences would happen to her. It might tell her that since she
has never yet instantiated the turning on of her red channels,
novel visual experiences will transpire. Tye himself might even
urge her to enjoy such experiences and to relish them.

But this does not mean that it would be rational for her to be
surprised – if Tye’s elaborated PANIC theory is true. It does
not mean that she has good reason to expect intense delight. Presumably, Mary Mary has already been told (by the theory and associated science) about the constitutive functional role of those experiences, and about how states with this functional role will be physically instantiated. She already has their nature descriptively in hand. Her situation is rather like this. Person A has seen *The Crying Game*. Person A tells person B, who has not seen the movie, that a surprise occurs, and what it is. Person A says, “I don’t want to disconnect you from the movie experience. You have yet to be in the neural states that subserve seeing the movie for yourself. Have your cinematic relish. Enjoy it.” Enjoy? Perhaps. But not because of unanticipated surprise.

The Elaborated PANIC theorist cannot have it both ways. Mary Mary cannot be so informed as to know everything that Tye’s theory tells her about color experiences, everything that Raffman’s distinction adds to that theory, and everything that completed physical science says about such experiences, and so uninformed about being acquainted with color – about knowing how red things look – that she will be rationally surprised on having a red color experience.

NOTES

* This is a thoroughly co-authored paper; the order of authorship is alphabetical. We thank the editor for inviting this reply.
1 Raffman (2005), 12–13. All subsequent quotations are also from Raffman (2005).
2 Likewise, learning what it is like to see red is a matter of becoming introspectively acquainted with the state of seeing red, and knowing what it’s like to see red is a matter of being introspectively acquainted with that state. Thus, the associated introspective knowing-that state, expressible linguistically for example by way of an indexical statement like “Ah, seeing red things is like this”, is doubly derivative. It is derivative from the higher-order, introspectively directed, state of being acquainted with what it is like to see red, which it turn is derivative from the first-order state of being acquainted with how red things look.
3 We will adapt, in compressed form and with appropriate modifications, material from pp. 70–72 of Graham and Horgan (2000).
4 As we noted on pp. 81–82 of Graham and Horgan (2000), Mary Mary can rationally expect the possibility of certain kinds of moderate surprise upon
being released from her monochrome situation, but not the extreme kind of surprise that actually lies in store for her. As we said:

For instance, she can expect that if her initial post-release experiences are of bare color patches, without any collateral visual or non-visual information, then she might be surprised when she subsequently finds out how her newly acquired phenomenal concepts match us with which objective colors. None of this pre-release knowledge, however, provides Mary Mary with any apparent reason to expect the additional and extreme surprise, the unanticipated delight, or the utter amazement that like in store for her (81–82).

See also notes 8 and 9, in which we argued that Tye’s own discussion of how one can lack knowledge of a fact without lacking knowledge of any corresponding FACT, by way of an analogy involving an item of knowledge expressible by an essentially indexical use of the first-person pronoun, is directly applicable only to the moderate, rationally expectable, kind of potential surprise.

REFERENCES


Wake Forest University, University of Arizona