



CRISPIN WRIGHT

*Euthyphronism and the Physicality  
of Colour: A Comment on Mark  
Powell's "Realism or Response-  
Dependence?"*

According to a Euthyphronist about colour, the extension of central colour concepts like **red**<sup>1</sup> is partially determined by our (phenomenological, or doxastic) reactions under certain ideal conditions (C-conditions). Mark Powell's paper engages the important questions whether such a view can be reconciled with physicalism about colour and—not necessarily the same thing—with the idea emphasised by philosophers such as Mark Johnston<sup>2</sup> that, even under the most ideal conditions, objects' colour properties are *explanatory*—so causal-explanatory, presumably—of the relevant reactions. Elsewhere<sup>3</sup> I have ventured positive if somewhat provisional answers on both points, suggesting (in effect—I did not exactly so express matters) that colour *concepts* may be Euthyphronic while in effect presenting

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Mark Powell, "Realism or Response-Dependence?", *European Review of Philosophy*, vol. 3, pp. 1–13. Thanks to John Divers, Jim Edwards and Alex Miller for helpful comments.

1. I shall in general use bold-face when referring to concepts, plain-face when speaking of properties.
2. See his "Objectivity Refigured: Pragmatism without Verificationism" in J. Haldane and C. Wright, eds., *Reality, Representation and Projection*, Oxford: Oxford University Press 1993.
3. In *Truth and Objectivity*, Cambridge, Mass.: Harvard University Press 1993, at pp. 128–132.

(what turn out to be) physical *properties* and that—if such are indeed the properties they present—then that safeguards the explanatory intuitions in question.

Powell is dissatisfied with this moderate Euthyphronism for two reasons. First, he regards it as doing less than justice to the causal-explanatory intuitions in question to portray them as hostage in this way to physical (optical) science. Rather, they are already entrenched in our thinking. (For instance, objects' colours are—he believes we would want to say—among the causes of the way they appear in photographs; so presumably have effects on the chemicals which coat a film.) Second, he believes that Euthyphronism should unconditionally insist that red is no physical property—the moderate position gives “too much credence to realist intuition”.

### 1.

In order to understand the (somewhat complex) dialectical situation here, we may focus, as Powell suggests, on the status of three claims (I depart slightly from the formulations of his paper):

- (a) That even under optimal, substantially specified conditions of observation, C, an objects' colour—say, its being red—is among the *causes* of its appearance—its looking red.
- (b) That it is *a priori* that under such C-conditions, all and only objects look red which are red (the Euthyphronist's “provisoed biconditional”).
- (c) That red is not a physical type.

The four positions under consideration are then as follows.

(1) A proponent of the “Missing Explanation” objection, such as Mark Johnston, regards (a) and (b) as incompatible.

(2) Philip Pettit's response<sup>4</sup>—at least as naturally interpreted<sup>5</sup>—is that there is no incompatibility if an acceptance of (b) is consistent with the denial of (c)—with affirming that red *is* a physical type; and he proposes that such a combination is indeed consistent, provided the a priority of (b) may be viewed as of a piece with the a priority generally attaching to the connection between the *reference-fixers* for a natural kind concept and its instances. The

4. Philip Pettit, “Realism and Response Dependence”, *Mind* 100, 1991, 587–626.

5. Pettit *loc. cit.* p. 609.

concept **water**, for instance, if indeed a natural kind concept, is so set up that nothing counts as falling under it unless of a kind of stuff which is dominantly causally responsible for the co-instantiation of the features—tasteless, colourless liquid, occurring naturally in lakes and rivers, satisfying thirst, essential to life, solvent for many substances, etc., etc.—by reference to which we fix its extension. It is thus a priori that water is the stuff which, if anything does, generally produces co-instantiations of those features—the a priority claim is quite comfortable alongside the causal one. And so also it may be with (a) and (b) if we regard looking red under C-conditions as a reference-fixer for “red”.

(3) In *Truth and Objectivity*, I observed, however, that no Euthyphronic concept comfortably fits the paradigm of a natural kind concept, since a priority for a suitable provisoed biconditional is inconsistent with the hostage to reference-failure which any prototypical natural kind concept must hold out. Nevertheless, I suggested that we might feel free to identify the property presented by a Euthyphronic concept with a suitable physical type if one—or a small number of such—presented itself—and that such intuitive sympathy as we have with (a) may be accounted for by optimism about this possibility, resulting in a rejection of (c). However should this optimism prove unfounded, then, I suggested, we would—and ought—to regard the intuitions underlying the Missing Explanation argument as compromised.

It is worth saying a little more about how this contrasts with the view taken by Pettit. The idea that many general pre-scientific concepts are in like case with **water**, taken as a paradigm of a natural kind concept, comes into prominence with Putnam and Kripke<sup>6</sup> and contrasts with an older model, associated (I believe wrongly) with the later Wittgenstein, according to which it would be a mistake to treat the types of features listed for water—tastelessness, colourlessness, etc.—as sustaining a merely contingent (causal) relation to the real determinant of the extension of the concept. Rather, they fix that extension themselves, after the fashion of a cluster of *criteria*—in the technical sense of that term that arose in the first generation of commentary on the *Philosophical Investigations*. On this model it would

6. *Loci classici*: Hilary Putnam, “The Meaning of ‘Meaning’”, in K. Gunderson, ed., *Language, Mind and Knowledge*, Minnesota Studies in the Philosophy of Science VII, Minneapolis: Minnesota University Press 1975; and Saul Kripke, *Naming and Necessity*, Oxford: Blackwell 1972.

suffice without further ado for a substance to be water that it displayed (some weighted majority of) the relevant surface features. There would be no further relevant question about its non-manifest essential character.

Now clearly there *could* be concepts—*criterially governed* concepts—for which this model was correct. Even if our actual concept of water is indeed a natural kind concept, we might have employed instead a concept, **schwater**, for which the water-indicators did play a criterial rather than reference-fixing role. Thus while **water** would fail of reference were it to turn out that there is no interesting or explanatorily unifying property underlying the presence of the water-indicators, no such conclusion would be warranted for **schwater**. If “water” expressed **schwater**, its use would be indefeasible by any purely scientific developments. And so will be the use of “red” if it is indeed constrained by an a priori true, provisoed biconditional meeting the four Euthyphronic conditions.<sup>7</sup>

Clearly, though, our working with a criterially governed concept would be still be consistent with the scientific disclosure of a natural property underlying the characteristic co-manifestations of the relevant criteria—so that a corresponding natural kind concept, had we employed it, would have been in good shape. That would have been the situation if the concept we express by “water” had been **schwater**. **Schwater** would still have picked out H<sub>2</sub>O. What in that case would show that the concept *was* nevertheless criterially governed?

Kripke was perhaps the first to see clearly that their involvement of natural kind concepts has implications for the modal status of certain thoughts. If water is a natural kind—say H<sub>2</sub>O—then it is *essentially* of that kind: something which manifested all the indicators but was not so constituted would not be water but some other kind of stuff. By contrast, if **water** were criterially governed—if it were **schwater**—then such a substance would fall under the concept whatever its essential constitution, and we ought to allow that while its instances are (mostly) made up of H<sub>2</sub>O, there could be instances which are composed quite differently. So if **water** is a natural kind concept, and it is true that water is H<sub>2</sub>O, it is *necessarily* true that water is H<sub>2</sub>O. But if **water** were a criterially governed concept, it would be *contingent* what constitution its instances had—or indeed whether they had any uniform or typical

7. Summarised by Powell at p. 5 of his paper.

constitution. To determine the status of our actual concept, then, we should check our intuitions about claims such as:

Water is H<sub>2</sub>O, but it might have been constituted differently,

or:

Water might have had no normal physical constitution.

If the concept is indeed a natural kind concept, these should impress as solecisms.

So too with **red**. The Euthyphronic proposal about the concept is, in effect, that it is criterially governed, with looking red under C-conditions one dominant such criterion. That allows for it to be *flexible* with respect to whatever, if any, typical physical constitution red things have; so it leaves us free to regard “red” as a non-rigid potential designator of physical kinds, just as “water” would be if it expressed the concept, **schwater**. That, in essentials, was the view in *Truth and Objectivity*.

(4) Powell’s view is that Euthyphronism lacks even this option since it is committed to (c). However, he maintains, (a)–(c) are nevertheless compatible. If he is right, then both Pettit and I are wrong to suppose that the Euthyphronist can do anything but reject the suggestion that colours are physical types; but a pure—genuinely anti-realist—Euthyphronism about colour will nevertheless, Powell thinks, be unqualifiedly consistent with the intuitions which underlie the Missing Explanation argument.

## 2.

Since the position I tried to reserve for the colour Euthyphronist depends on the referential flexibility of “red”, a reader may be disconcerted to find that a key premise for the argument Powell develops for (c) is that the identity of red with any physical property—say  $\emptyset$ —must, like the identity of water with H<sub>2</sub>O, be a matter of (metaphysical, or essentialist) *necessity*. However I propose to defer consideration of this for a while. I’ll return to the matter after reviewing Powell’s argument.

The premise entails that the thesis, (M):

$$(\forall x)(\emptyset(x) \leftrightarrow \text{Red}(x)),$$

must also hold as a matter of necessity. But if **red** is Euthyphronic, we also have that it is a priori—so necessary<sup>8</sup>—that an appropriate provisoed biconditional holds:

(Red)  $(\forall x)(C(x) \rightarrow (Red(x) \leftrightarrow \text{Looks red}(x)))$

We thus have distinct yet indefeasibly necessary and sufficient conditions for *x*'s being red: under *all conditions*, that it be  $\emptyset$ , and under *C-conditions*, that it look red. It must thus somehow be a matter of necessity that these never clash. Powell's thought is now that, since the connection between *x*'s being  $\emptyset$ —a matter of the microphysical constitution of its surface, presumably—and its looking red, can only be a *causal* one, the necessity—under *C-conditions*—that there be no clash must require the necessity of a causal connection between being  $\emptyset$  and looking red. But no—one would like to say “merely”—causal connection can hold of metaphysical necessity. So something is amiss with any premises which require otherwise. The Euthyphronist, in particular, must therefore reject the necessity of the thesis *M*, irrespective of what physical type is chosen for  $\emptyset$ .

Again: the nerve of the thought is that if an object's being  $\emptyset$  gives a *metaphysical* guarantee—albeit in a restricted class of circumstances—of its having a certain appearance, the relation between guarantor and guaranteed cannot be merely causal. Euthyphronism about colour, coupled with the belief that colours are physical types, forces us to regard an object's being of such a type as providing such a metaphysical guarantee. But the connection—between an object's being of any particular physical type and its manifest appearance—*ought* to be at most a causal connection. So the Euthyphronist should jettison any supposition of type-type identity between colours and physical properties.

This line of argument is arresting. But there may seem to be an immediate line of response, deploying materials to which Powell himself is sympathetic. Briefly, it is by no means obvious that there has to be the tension between the notions of metaphysical and causal sufficiency which it assumes. Powell is hospitable to the idea that an account of response- or

8. Like Powell, I am taking it that metaphysical necessities of e.g. identity, origin and constitution can harmlessly commingle in inferential contexts with conceptual necessities. My own view is that they are actually the very same kind of—absolute—necessity, albeit (perhaps) originating in different ways.

judgement-dependence running along the lines I have proposed must incorporate something to the effect of my fourth *Extremal Condition* if a contrast is to be drawn between cases where ideal responses *partially determine* the extension of a concept and a case where they merely *infallibly track* an independently determined extension. If that is right, then—unless the idea of tracking is somehow not to be construed *causally* in any such case—there can be no solecism inherent just in the idea that it can be a matter of absolute necessity that, under certain substantially specified conditions, an object's possession of a certain property will be tracked by—hence causally implicated in the production of—a thinker's opinion or other form of response.

In sum: If (*M*) and (*Red*) are each necessary, then so is

(P)  $(\forall x)(C(x) \rightarrow (\emptyset(x) \leftrightarrow \text{looks red}(x)))$ .

Powell's thought is that, no matter what the background circumstances, the connection between an object's microphysical properties and its appearance can only be a causal one, and thus cannot be metaphysically guaranteed, even conditionally. The response is that if it is ever possible to have a conceptual guarantee that subjects who meet certain substantially specified conditions are infallible over a certain subject matter, a structurally similar provisoed biconditional will hold of necessity, even though their opinions be thought of as *produced by*—rather than determinative of—the subject matter in question. There is no obvious absurdity in the idea that while our opinions about some range of facts are in part caused by those very facts, we can nevertheless circumscribe in substantial terms all possible ways in which we might go astray and so—by hypothesising that none of them applies—generate a necessarily true provisoed biconditional.

It might be rejoined on Powell's behalf that there is still an unresolved tension. If the *only* way of reconciling the necessity of (*M*) and (*Red*) is by, in effect, construing the necessity of the latter as a reflection of subjects' *infallibility* about red under *C-conditions*, then that is precisely not to effect a reconciliation which the Euthyphronist about colour can accept. However this rejoinder misses the point. Powell's problem concerned the necessity not of (*Red*) but of (P): it is in (P) that the embedded biconditional must surely be agreed on all hands to call for a causal relation. To invoke the idea of infallibility in order to accommodate the necessity of (P) is *not*, however, a commitment to an infallibilist construal of the necessity of (*Red*). It is about the

extension of the concept,  $\emptyset$ , that, according to the suggestion, the satisfaction of the C-conditions brings infallibility. That is not a commitment to the idea that under C-conditions we are similarly (merely) infallible about the extension of **red**; for **red** is not  $\emptyset$ . The infallibility, or otherwise, of a class of judgements will be a function of the *concepts* they configure. There is no contradiction in the idea that while (*Red*) satisfies the Euthyphronist's extremal clause, (P) does not.

There will be more to say. However I now wish to canvass a different argument which, without involving any contention about causation, can deploy essentially Powell's materials—but with one additional presupposition—to reach the same conclusion: that for the Euthyphronist about colour, red cannot be a physical type.

Any claim that a certain truth is *conceptually* necessary is, of course, hostage to what we can, coherently and lucidly, conceive.<sup>9</sup> The needed additional presupposition just advertised is that *metaphysical* necessities generally are likewise defeasible by a successful attempt to conceive of their not holding. Thus no absolute necessity is genuinely counter-conceivable. It is just that when a necessity is claimed to originate in the essence or origin, e.g., of an object or substance, and is hence a posteriori, attempts at counter-conceiving are open to a certain kind of obstacle. For example, the alleged metaphysical necessity of water's being H<sub>2</sub>O is not defeated merely by lucidly conceiving of stuff in all manifest respects like water which turns out, microphysically, to be other than H<sub>2</sub>O, since it is question-begging to suppose that, in conceiving of stuff which is (merely) in all *manifest* respects like water, we thereby conceive of water. If water does indeed have a non-manifest essence, then those conceivings are different. In brief: when an alleged necessity is *de re*, any purported counter-conceiving must, if it is to work, be able to defend the claim that its content reaches right out to embrace the *res* in question, as it were, rather than stopping short at a surface of characteristic properties.

Now for the Euthyphronist about colour there can be, under the relevant C-conditions, no difference between being red and being in all *manifest* respects as a red thing would be—what the necessity of the provisoed biconditional ensures is, in effect, precisely that in this restricted class of circum-

9. Compare Hume: "... whatever the mind clearly conceives, includes the idea of possible existence, or in other words, that nothing we imagine is absolutely impossible." *Treatise* Bk I, pt. II, section II.

stances, the essence of red is wholly open to view. And in that case the supposed metaphysically necessary identity of red with  $\emptyset$  can be put under pressure from a thought experiment, since it appears readily conceivable that conditions be C, that an object look red in them, and yet microphysical investigation discloses that the object is in some condition other than  $\emptyset$ .

It will strike readers familiar with Saul Kripke's *Naming and Necessity* that this line of thought is, nearly enough, an exact parallel to the famous argument there developed against physicalism about pain. To be sure, Kripke's argument exploits the fact that there is simply no provision for a phenomenal distinction between feeling pain and being in pain, whereas the argument just adumbrated runs from the premise that, under a restricted range of circumstances, there is no corresponding distinction between being red and looking so. But that difference is of no consequence, so long as the circumstances in question are ones which we can properly claim to be able to conceive as obtaining. And if the C-conditions are substantially specified, then surely we can.

This reconstruction of Powell's argument is worth a more detailed exploration than is possible here, and I hope to return to it on another occasion. The premise on which it depends, that all absolute necessities, metaphysical ones included, are subject to constraints of conceivability is a substantial item of modal epistemology and needs a substantial defence. Note, however how naturally it seems to have come to Kripke at least to assume this. It never seemed to occur to him to respond to the hypothetical objector, who thinks she can conceive of Hesperus turning out to be other than Phosphorus, or of heat being something other than molecular motion, or of water turning out not to be H<sub>2</sub>O, by saying: "So what? What has conceivability to do with it? I didn't claim these things were *conceptually* necessary." Rather the validity of the *prima facie* conceptions, and their *prima facie* relevance, are straightaway conceded. The defence is rather that they are not of what they appear to be—that what is actually conceived in these cases goes no further than *qualitative* similarity to what was intended.

### 3.

Back now to the concern I bracketed earlier. It remains that the most that is in prospect from the foregoing considerations is a proof that colours are not physical types on the assumption that if they were so, it would be a matter of necessity that they were. That in effect is what is denied

if we think, as in *Truth and Objectivity*, of colour concepts as criterially governed. Nothing has yet been said against that view.

However there is something which can be said. Where  $\emptyset$  is a specific physical property, the necessity—if true—of the proposition that red is  $\emptyset$ , would be carried by the rigidity of the term, “red”. Now ordinary intuition would perhaps anyway support the claim that “red” is rigid—that in speaking of an object’s redness in hypothetical circumstances, we would always intend to speak of the very same property which, in calling an actual object “red”, we would intend to ascribe to it. If Euthyphronism about **red** is correct, however, then this intuition may be reinforced by a suggestive argument. *Do red things have a property in common?* Ordinary thought surely has it that they do: that, just in virtue of being red, samples of red—though of course they may differ in shade—always share a common determinable condition. (Contrast, say, samples of jade.) But if they do, then it is an inescapable consequence of the necessity of the provisoed biconditional, (*Red*), that the property in question must be conceived as one of which it is a necessary feature that it is possessed by any object with looks red under C-conditions.<sup>10</sup> Since if **red** were criterially governed, there *would be* no property which is *necessarily* possessed by all instances of the concept under C-conditions—for the whole point about criterially governed concepts is that they allow of variable modes of instantiation—it follows that Euthyphronism about colour, if it is to be consistent with our ordinary thinking, is a commitment against the idea that **red** is criterially governed. In that case the *Truth and Objectivity* proposal, that **red** is both Euthyphronic and criterially governed, is out of court and there is no extant obstacle to Powell’s assumption that any identification of red with a physical type must purport to hold of necessity. So Powell’s claim that no such identification is consistent with Euthyphronism remains to be rebutted.

#### 4.

One common response to Kripke’s original argument about pain is that it has no power against *token-by-token* identifications.<sup>11</sup> Any particu-

10. If (*Red*) is necessary, we have:

Necessarily:  $(\forall x)(C(x) \ \& \ \text{looks red}(x) \rightarrow \text{red}(x))$

So a seemingly unexceptionable property-abstraction yields that red is that property F such that necessarily:  $(\forall x)(C(x) \ \& \ \text{looks red}(x) \rightarrow F(x))$ .

lar pain can still be a particular *token* physical state even if—assuming the argument is good—our concept of pain precludes identifying pain with a physical *type*. Powell’s suggestion is that such a recourse is available to the Euthyphronist about colour too: indeed, that response-dependent concepts as a class will exemplify something akin to the anomalousness for which Davidson has made a case in connection with the intentional, and that just as Davidson’s view is consistent with the physicality of token intentional states, so a physicalist conception is available of the instances, token by token, of response- or judgement-dependent concepts. Since any physical items may be unproblematically regarded as causally active, a way is thereby provided to reconcile Euthyphronism with the causal-explanatory intuitions invoked by proposition (a) and appealed to in the Missing Explanation argument.

A proper discussion of this proposal would have to engage transpositions of many of the hard issues which are raised by Davidson’s anomalous monism. I will close by commenting on just two of them.

First, a point about Powell’s invocation of the idea of *supervenience*. Powell suggests that, once identifications of colours with physical types are debarred, the fall-back position of token-by-token identification is actually *imposed* by the kind of supervenience which holds between colour and the physical. The supervenience which, he suggests, is a constitutive principle for colour issues in the necessity that any red thing, for instance, will exemplify some physical property (or range of properties)  $\emptyset$  such that anything which has  $\emptyset$  is likewise red. This would, of course be a trivial consequence if colours were (necessarily) physical types. Why does Powell think it is imposed if they are not?

He is less than fully explicit, but a natural line of thought would run as follows. The supervenience requires that, as a matter of necessity, any change in an item’s colour must be attended by a change in its physical condition. This would be utterly mysterious if the properties in question were simply of quite different kinds: how could change in an object’s physical condition absolutely *necessitate* change in other, non-physical respects? Unless an object’s colour properties are *somehow* constituted in its physical constitution, it seems impossible to understand how the two could be linked

11. See Colin McGinn, “Anomalous Monism and Kripke’s Cartesian Intuitions”, *Analysis* 37, 2, 1977, pp. 78–80.

as a matter of necessity. Thus only physicalism, of however attenuated a form, can make sense of the supervenience.

I think this line of thought is wholly illusory. It is not clear how token-by-token physicalism actually helps to explain the relevant form of supervenience at all. To be sure, if we are given merely that the redness of a particular tomato actually *is* some token physical condition of it, then we may infer that had it not been red, it would have been in a different physical condition—that is, a different *token* physical condition. But the mooted form of colour-on-physical supervenience requires that a change in the colour predicates truly applicable to an object requires change in its physical description at the level of the *types* of physical state it is in—“Ø”, in the above formulation of supervenience, is a variable for physical types.<sup>12</sup> Mere token-by-token physicalism cannot explain the validity of *that* principle. For it is silent on whether, if the tomato had not been red, the different token physical state which it would then have been in could not still have been of a physical type it is actually in, so is consistent with the idea—preposterous as it may seem—that its then physical state could have been in every way *indistinguishable* from its actual physical state. Colour-on-physical supervenience, as ordinarily understood, proscribes that.

The matter needs further discussion but I offer the conjecture that *only* type-type physicalism about colour can explain the form of colour-on-physical supervenience to which Powell is, surely rightly, sympathetic. That is *not* to suppose that Euthyphronism actually clashes with such colour-on-physical supervenience. But it would pre-empt any *explanation* of the latter if Euthyphronism does indeed preclude type-type identities. So if the conjecture is right, then there will be a clash if the supervenience may not legitimately be taken as a *primitive* principle but is viewed as requiring explanation by appeal to more basic features of colour properties.<sup>13</sup>

12. If it were not, the stated supervenience principle would not justify our projecting colour properties on the basis of an object's physical states under (near) C-conditions onto objects in like physical states under non-C-conditions. But Powell, rightly as it seems to me, lays emphasis upon the centrality of this form of projection in the explanation of our conception of e.g. things' colours when in darkness.

13. Token-token physicalism, as a response to Kripke's argument (but see note 14), will be correspondingly insufficient to explain the normally accepted form of

## 5.

Finally, a suggested correction to the way Powell, and many others, have portrayed the kind of position which he advocates for the special case of colour. I have in mind the play with *anomalousness*.

Let's ask, can the token-by-token proposal really save the causal-explanatory intuitions which fuel the Missing Explanation argument? A seemingly powerful line of objection argues, to the contrary, that such a form of colour physicalism would actually prove—under readily conceivable empirically possible circumstances—a serious obstacle to our ever doing so.

Imagine—of course, this is not the actual empirical story—that the aetiology of our colour responses proves to be physically relatively straightforward. Take the simplest possible case: when some single type of surface reflectance property, say XYZ, seems to be invariably involved in causing the appearance of red. If Powell's argument works, the objection runs, then surely we would be metaphysically *debarred* from identifying red with that property! But then it looks as though anyone who held that it is their token-by-token identity with physical states which explains the causality of objects' colours, would be forced in this scenario *either* to reject the best candidate for a physical explanation—that in terms of XYZ—or to view an object's appearance as red as being physically overdetermined, caused both by its being XYZ and by its being in whatever *other* token physical state constituted its particular redness (though, of course, it would be difficult to know what token state that was, since the seemingly invariable cause of a red appearance would be, by hypothesis, the object's being XYZ).

An analogue of this objection, which may appear devastating, would apply in any case where a merely token-by-token physicalism was defended and where the relevant physical science might coherently be envisaged nevertheless as proceeding relatively smoothly at the level of physical types.

However the objection makes a crucial assumption. It assumes that if we may not identify redness with a physical type, then we are barred with identifying tokens of redness with tokens of a single physical type. That may be questioned. Consistently with rejecting the identity of redness, as a type of state, with the state of being XYZ, we might in the described scenario retain

supervenience of sensations upon brain-states, so that the latter principle too will be in jeopardy if it cannot be taken as primitive and if Kripke's argument succeeds.

the explanatory advantages of that identification by identifying each object's *individual redness* with *its particular state of being XYZ*. Then, if best science were to find that being XYZ is indeed the normal cause of an object's appearing red, the fact that XYZ could not legitimately be *identified* with redness would be no obstacle to adapting this finding to Powell's purpose in hand—that of sustaining the idea that objects' colours cause their colour appearances. It would be enough that justification for regarding the state of being XYZ as a normal cause of a red appearance would suffice to justify taking *this* object's being in *this* XYZ state as a cause of *its* red appearance. If we then proposed that its particular XYZ state *is* its redness, that would be to take its redness as a cause of its red appearance, just as Powell wants.

If this is right, it points up something important, namely how merely token-by-token identifications with the physical can always tap into the explanatory advantages that would have been secured by corresponding type-type identifications. Thus token-by-token theories need not, *per se*, involve any consequences about *anomalousness*. Sure, physical laws are essentially general, so naturally formulated in terms of types of property, event and state. Thus in order to harness such laws to the explanation of what we presume to be the effects of objects' colours, it might seem that we have to find types of physical state for the colours to be. And then, if such identifications are proscribed, it may seem as though some form of anomalousness, or scientific opacity, of colour must be the upshot. But not so fast: the simple countervailing thought is that if a law connects one type of state with another, it thereby connects their tokens. So to treat of colour in a fully intelligible but physical-scientific way, we do not need type-type identifications: it would be enough that token colour states be token physical states of (some manageable number of) types that are tractable at the level of physical law.

These considerations may seem to speak for the coherence of Powell's ingenious strategy—once purified of the play with anomalousness—for reconciling the triad (a), (b) and (c). However I had better remind the reader that the Powellian argument against type-type identity (in both its original causal and suggested Kripkean forms) depended on the premise that "red" is rigid. This premise and the intuition, that red things necessarily share a property, by which it was supported are both presumably inconsistent with the token-by-token proposal in any case, since the latter must allow that no single property need be shared by red things. It would therefore appear that

no argument that colours are not physical types which depends on the rigidity of colour predicates can allow of an accommodation involving token-by-token identification instead.<sup>14</sup> If that is right, then Powell's token-by-token physicalism is necessarily unmotivated by his argument, and one may feel that the proposal of *Truth and Objectivity*, allowing for contingent type-type identity of colours and physical states, remains fundamentally unchallenged.<sup>15</sup>

University of St. Andrews  
Fife KY16 9AL  
Scotland  
cjpgw@st-andrews.ac.uk

14. The same consideration, if good, must defeat McGinn's response to Kripke's original argument: it cannot be coherent to accept an argument against the identification of pain with C-fibre stimulation which depends upon the rigidity of pain yet simultaneously to canvass the identifiability of particular pains with particular token physical states.
15. To be sure, Powell voiced a supplementary concern: that our intuitions about the causal efficacy of colours are entrenched in a way the *Truth and Objectivity* proposal cannot safeguard. He quotes this passage:

... were we to become convinced that there is only a multiple physical *heterogeneity* among ... same-coloured things, it ought to cease to seem sensible to ordinary thought to view colours as causally explanatory of best opinions about them. But so I think it would. (*Truth and Objectivity*, p. 132).

Powell disagrees, both with the normative and with the sociological claims in that passage. The matter would bear a lot more discussion, but I'll say very briefly why I think the objection is misconceived. Consider a situation in which the hostage held out by the *Truth and Objectivity* proposal is not redeemed: no underlying physical similarity, nor even a manageable range of physical similarities, holds between items correctly described as red. Compare the situation if no underlying physical similarity, nor even a manageable range of such similarities,

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had proved to overlap correct predications of water. Now **water** was associated with any number of intuitive causal beliefs—about thirst, dissolution, rust, cleanliness, etc., etc.—long before Dalton. Suppose such beliefs apparently proved robust in the scenario just envisaged. So people went on describing themselves as believing e.g. that water assuages thirst despite knowing that water was of no one physical type nor even any manageable range of physical types. Would that have to be irrational? We need a distinction. What would be irrational in the circumstances would be the belief that *being water* was a causal-explanatory property. But retaining beliefs about the causal powers of samples of water would be no commitment to that. (Compare the difference between believing that being a red toadstool is a causally explanatory property and believing that red toadstools typically have certain causal powers.) Granting, then, for the sake of argument that the kind of intuitive belief to which Powell calls attention—for instance, about the effects of coloured objects on the chemicals which coat a film—would indeed, as a matter of sociology, be robust in the face of disenchantingly heterogeneous findings in the physics of colour, it would be a further question whether such robust beliefs would require interpretation as commitments to the causal powers of colours. It would only be if they did that the *Truth and Objectivity* account would call them into question. And if they were correctly so interpreted, then I stick to it that they *would* be irrational. However we would have to be alive to the less demanding interpretative possibility which would view such beliefs as ascribing certain causal powers to coloured things, not to their colours. My suspicion is that Powell, and those for whom his remarks on this may strike an intuitive chord, are probably making too little of that contrast.



RALPH WEDGWOOD

## *The Essence of Response-Dependence*

Long ago, Democritus proclaimed: 'by convention colour, by convention bitter, by convention sweet: in reality atoms and the void' (Barnes 1987, p. 254). Ever since, philosophers have been tempted by the view that colours, flavours, values, and the like, are less objective than shape or mass or motion. It can be true that certain objects are square, or that they have a certain mass, purely in virtue of how those objects are in themselves; but it is not true, purely in virtue of how the objects are in themselves, that they are red, or bitter, or good.

In this rough and intuitive form, this thought has always seemed attractive to philosophers. However, it has proved difficult to develop the thought into a more precise theory without incorporating other, less attractive elements. In this paper, I shall explore a relatively new approach to capturing the thought that colours, or flavours, or values, are less objective than shape or mass or motion—the approach based on the idea of 'response-dependence'. In the first section, I try to indicate an intuitive distinction, between the more objective and the less objective, which I believe that this approach should capture. In the second section, I examine the conceptions of response-dependence that have been developed by Mark Johnston, Philip

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An earlier version of this paper was presented to the University of St. Andrews Philosophy Club, and to my former colleagues in the Department of Philosophy at the University of Stirling. I am grateful to both groups, and also to Alex Byrne, Timothy Williamson, Crispin Wright, and two anonymous referees, for helpful comments. I should especially like to record my gratitude to the late Murray MacBeath.