

PROPERTY DUALISM ABOUT CONSCIOUSNESS AND EPISTEMIC NECESSITY

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Abstract

The ontology of Chalmers's property dualism is examined for its ability to account for the justified belief that one is phenomenally conscious. Although this belief underpins the argument for property dualism, I claim that it can only be properly represented in this dualistic ontology if certain logically possible scenarios are excluded. Epistemic normativity thus constrains this ontology by introducing a partial dependence of cognition on temporally invariant phenomenal properties.

Keywords

Phenomenal consciousness, Property dualism

Introduction

This paper examines the (quasi-)epiphenomenalism that is implied by Chalmers's (1996) property dualistic view of phenomenal consciousness. A thought experiment is constructed to show that the purported explanatory independence that characterises the relation between two types of property a mental state may possess, that of being an object of my awareness (i.e. a psychological property), and that of being a phenomenally conscious state, is not compatible with certain normative epistemic requirements. The paper thus questions the conclusions of Chalmers's arguments for property dualism, by claiming that conceptual considerations are not sufficient to draw ontological conclusions. But unlike objections against property dualism based upon the notion of metaphysical necessity (Loar, 1997; Levine, 2000), it is *epistemic normativity* that provides the additional constraints. And rather than leading to a rejection of property dualism, this points to a link between psychological awareness and phenomenal consciousness that builds a dependence structure upon Chalmers's dualism of properties.

I shall present an argument based upon the consideration of logically possible phenomenal properties, to show how the epistemology of phenomenal consciousness cannot be properly represented in Chalmers's dualistic ontological framework. Different responses to this argument

are examined. The ontological conclusions are then discussed and contrasted with those derived from standard criticisms of Chalmers's position based upon metaphysical necessity. Finally, some speculative considerations as to the meaning of these conclusions are presented.

Chalmers's argument

In 'The conscious mind', David Chalmers (1996) develops a multifaceted argument to show that the phenomenal nature of conscious experience is not reducible to functional properties of a physical substance. For Chalmers, this conclusion is inevitable if one is to 'take seriously' the justified belief that we are phenomenally conscious (what he calls 'phenomenal realism'). The argument turns, in particular, on the logical possibility of creatures identical to us but for their lack of phenomenal experience. Since phenomenal properties are intrinsic, it is possible to conceive of creatures that are functionally/physically identical to us but who do not have these phenomenal properties.¹ This amounts to an explanatory gap between a full description of a subject in terms of functional/physical properties, and her phenomenal properties. Phenomenal properties are therefore not reductively explainable in terms of functional/physical properties.² This entails that phenomenal properties do not supervene logically upon the domain of functional/physical properties. From the *explanatory gap*, Chalmers thus concludes to an *ontological gap*, namely that between a complete description of the world in terms of functional/physical properties on the one hand, and phenomenal properties on the other.

Further, since these zombies who experience no qualia (i.e. instantiations of phenomenal properties), behave in ways identical to us, this leaves phenomenal properties with the status of features that are irrelevant to the explanation of our behaviour, on the assumption of the closure of the physical (i.e. the assumption that for every physical event, there is a sufficient physical cause). Hence the quasi-epiphenomenalism of Chalmers's position.³

Finally, an account of Chalmers's position must also mention his views about the conscious states involved in cognition and behaviour control. Chalmers distinguishes (phenomenal) consciousness from awareness, where the latter is understood as 'a state wherein we have access to some information, and can use that information in the control of behaviour' (Chalmers, 1996, p. 28). Awareness therefore describes psychological states of mind. With the claim that properties of psychological awareness are assumed to logically supervene upon functional/physical properties, we have a characterisation of the main tenets of *Chalmers's Property Dualism* (hereafter C-P-Dualism).

In the following, I shall refer to a state of phenomenal consciousness as a state of Φ -consciousness, and a subject experiencing this state as having a Φ property. A state of psychological awareness will be described as a state of Ψ -awareness and a subject having such a state as having a Ψ property. Note that the assumption upon which C-P-Dualism rests, namely that we have a (justified) belief we are phenomenally conscious therefore requires that we are Ψ -aware of being Φ -conscious.

Chalmers's argument is therefore an inference from the premise that we are justified in believing we are phenomenally conscious to the existence of an explanatory gap, and further, to the identification of an ontological gap between functional/physical properties on the one hand, and phenomenal properties on the other. This ontological gap defines a dualism of properties. It is not

¹ For the sake of simplicity, I shall assume that phenomenal properties are possessed by the conscious subject.

² The possibility of a reductive explanation in principle need not entail the possibility of reduction (and the argument does not require any further discussion of this issue; for more on this, see Rowlands, 1995). Rather, the possibility of reductive explanation in principle is just the possibility that one can remove the mystery about what is thus explained.

³ It is only epiphenomenalism as such if explanatory irrelevance entails there is no causal rôle. Only a position such as pan-protopsyichism would however allow such a causal rôle to exist without an explanatory rôle.

my task in this paper to defend this position. Rather, I shall accept the arguments that lead to it, but show that tensions emerge when we consider the nature of the justified belief which features in the premise of the argument, in relation to logically possible scenarios of temporally altered phenomenal properties, understood within the ontological framework of C-P-Dualism. I shall explore these by constructing a thought-experiment.

Thought-experiment

Consider Mary, Jenny and Jerry who are identified as follows. Similarly to Jackson's (1982, 1986) classic papers, Mary is brought up in a secluded black and white part of the real world and at time T , she leaves her colourless isolation for the first time, and immediately has her first encounter with a red rose. Her sister Jenny, who also looks at the rose at T , has not suffered such isolation and had a normal upbringing in the real world. But Jenny has a twin sister Jerry living in a possible world $W1$ defined as follows: it is identical to ours, apart from the fact that before T , visual Φ properties are all black and white. C-P-Dualism tells us that Jerry does not report anything new when looking at the rose. This is because Jenny's behaviour is identical to Jerry's since these two sisters have identical physical properties. However, intuitively, Jerry's situation is more akin to Mary's.

The counter-intuitiveness of this result is, as such, no objection to C-P-Dualism. But consider Jerry's mental states. As noted above, we have an (immediate) Ψ -awareness of our phenomenal experience. That means that the mental state in which one is Φ -conscious of a red rose is available for the formation of a phenomenal belief and the expression of a phenomenal judgement. Jerry's phenomenal experience during the interval $[T-\Delta T, T+\Delta T]$ is apparently that of a change in her Φ -consciousness featuring the novelty of the experience of 'red'. No phenomenal judgement can however express this: since Jerry's phenomenal judgements are tied to her behaviour (i.e. if she makes a judgement, she can express it), they are identical to Jenny's.

As a result, Jerry's Ψ -awareness appears to be operating differently from Jenny's. For although Jenny is able to formulate a correct judgement about her phenomenal experience during the interval $[T-\Delta T, T+\Delta T]$, Jerry would appear unable to do so. So there is a mental state such that one sister is correctly aware of it in W , but the other is not in $W1$. Although a state of Ψ -awareness denotes an access to information which may be prone to errors for various reasons, a mental state cannot be described as providing access to some information if the information is never available. Since Jerry is in the situation of not being able to have access to the information that there has been an alteration of Φ properties, she cannot be said to be Ψ -aware of her phenomenal experience of the alteration.

This result is however incompatible with Chalmers's claim that we are Ψ -aware of being Φ -conscious. This claim must apply to any logically possible situation in which there is Φ -consciousness, and therefore to Jerry's case.⁴ Such an incompatibility therefore threatens the fundamental assumption upon which C-P-Dualism rests, and can therefore not be allowed to stand.⁵

First response

A first possible objection we must deal with is the claim that I have not correctly analysed Jerry's Ψ -awareness. On this view, Jerry is in fact aware of the phenomenal change. This means that Jerry

⁴ Altering C-P-Dualism so as to weaken the claim that we are Γ -aware of being Φ -conscious to a claim that only applies to certain worlds, i.e. those with invariant Φ -properties, will amount to the kind of restriction I shall introduce to deal with the problem. Namely, these other worlds are to be viewed as inaccessible to us on epistemological grounds.

⁵ Additionally, we note that Jenny cannot know she is not Jerry, since she would have no awareness of a phenomenal change were there one. This leads to a problem, for Jenny's justified belief that she is Φ -conscious certainly should include the claim that she knows when Φ properties change. We shall use such an argument to tackle the second response below.

holds the belief that there is a change in Φ properties. This is however excluded from the logical supervenience of Ψ -properties upon physical properties: Jerry and Jenny's Ψ -awareness are the same.

Note that if the C-P-Dualist were to drop this claim of logical supervenience, a problem would remain. For, since Jerry however formulates (or is disposed to formulate) the judgement that there is no change in Φ properties, she also holds the belief that there is no such change. This epistemological situation is however untenable.⁶ This can be seen either by pointing out the stark incoherence in Jerry's beliefs, or the impossibility Jerry has of formulating a judgement expressing there is a change in Φ properties. That is, Jerry's rationality breaks down.

Chalmers (1996) considers the related problem of the rationality of the zombie making phenomenal judgements. The zombie claims that he is Φ -conscious. Chalmers observes that, although there is a sense in which he is wrong, he is 'negatively rational' insofar as he does not make any 'invalid inferences [or] other such errors of reasoning' (Chalmers, 1999). In the thought experiment I am proposing, even such negative rationality can no longer be said to characterise Jerry's Ψ -awareness. For she forms a phenomenal judgement corresponding to a belief that flatly contradicts her phenomenal belief.⁷

Second response

A stronger objection would involve a move in the opposite direction from the previous response. Since the problem is an apparent incompatibility between the phenomenal and the psychological, it could be dealt with in at least two ways. The first response shifted the problem to one located within the psychological domain. The second response will, on the contrary, dispute the claims made about the phenomenal in the argument. One may thus query the assumption I have made that there is a phenomenal experience of the change in Φ properties. If there were no such experience, then there would be no requirement to have Ψ -awareness of it, and the identity of Jerry and Jenny's Ψ -awareness properties would *prima facie* no longer be problematic.

To specify the claim that is at the core of this objection, we must look into what is involved in the epistemology of phenomenal experiences. Chalmers (2003) distinguishes between different types of phenomenal concepts and associated phenomenal beliefs. Suppose I am looking at a red apple. Four concepts of phenomenal redness can be distinguished. The 'community relational concept' *red-C* is 'the phenomenal quality typically caused in normal subjects within my community by paradigmatic red things'. The 'individual relational concept' *red-I* is the 'phenomenal quality typically caused in me by paradigmatic red things'. The demonstrative phenomenal concept *E* refers to the phenomenal property of that which is the object of the subject's ostension (here, phenomenal redness). Finally, there is the pure *phenomenal concept* *R* that refers directly to the phenomenal property, i.e. 'in terms of its intrinsic phenomenal nature' (ibid.). This concept is direct insofar as it is not mediated. Corresponding to this concept *R*, is a *pure phenomenal belief* which is direct, i.e. the belief that one's experience is *R*. Thus, when Mary comes out of her black and white isolation, the knowledge she acquires is that the experience she is now having has 'such-and-such quality', where "such-and-such" refers to the content of concept *R*. The content of this knowledge can therefore be encapsulated in the propositions $E=R$. Other knowledge that she also acquires is that of the truth of the following propositions: $red-C = R$ and $red-I = R$.

The proposed objection is motivated by Chalmers's claim that 'the lifetime of a direct phe-

⁶ It is precisely this impossible epistemological situation that will lead to the proposed restriction upon possible worlds that are accessible.

⁷ Note that this result is to be distinguished from the issues connected with the paradox of phenomenal judgement which Chalmers analyses in detail. Here, we are concerned with our direct access to our conscious experience, i.e. that which leads to first-order phenomenal judgements such as 'That's red!'.

nominal concept is limited to the lifetime of the experience (or the instantiated quality) that constitutes it' (2003). On a strict reading of this claim, there is arguably no direct phenomenal concept of a temporal variation of an instantiated quality.

That there should be no direct phenomenal concept of the change that takes place in Jerry's world during $[T-\Delta T, T+\Delta T]$ would follow if the content of the direct phenomenal concept R were to refer to that which is purely instantaneous. One could dispute whether such an instantaneity without duration is actually a reality, for instance on the grounds of one's theory of time (see Dummett, 2000), but I shall not pursue this issue in this paper. The issue of whether the present experience is instantaneous or has a certain duration, is one that is not addressed by Chalmers, but I propose that we assume that concept R refers to the intrinsic property of the instantaneous experience.

With these assumptions, the proposed objection can now be seen as providing a clear challenge to the assumption I have made so far, namely that Jenny should have a phenomenal experience of the change in Φ properties. For if there is no direct pure phenomenal concept of such a change, there is no pure phenomenal concept of it, and therefore there cannot be any intrinsic property that constitutes the phenomenal experience. If the change in phenomenal properties is not itself the object of a phenomenal experience, this would seem to imply, *prima facie*, that there is no requirement of Ψ -awareness of such a change.

But, one must ask, how is it that Mary is aware of changes in the qualia she is experiencing as a result of her move out of her black and white isolation? Since the direct phenomenal concepts that contain her black and white experiences are no longer accessible, there must be another story as to how it is possible for her to remember her past experiences and compare them to her current coloured Φ properties. And indeed, this is the question that has to be addressed for any subject experiencing an alteration of Φ properties in our actual world.

If the proposed objection is to be successful, the answer to this question must be such that the explanatory work is done by cognitive (non phenomenal) concepts. For these concepts, whose possession is a property of Ψ -awareness, are identical for Jenny and Jerry. So that Jerry would have no Ψ -awareness of a Φ change, and there would be no inconsistency among her beliefs. The problem is that, because of the instantaneous lifetime of direct pure phenomenal concepts, some longer lasting phenomenal concepts would seem to be needed to enable Mary to compare the new coloured experiences with the older ones.

Chalmers introduces another type of pure phenomenal concepts that are not direct. These are *standing* phenomenal concepts, which make up the content of standing phenomenal beliefs. These concepts are formed on the basis of past experiences, e.g. what it is like to see a red tomato. And Chalmers (ibid.) shows that 'beliefs involving standing phenomenal concepts will inherit justification by a priori inference from direct phenomenal beliefs'. Therefore, the belief that my current phenomenal experience is different from the one I had a moment ago involves a direct phenomenal concept of my current experience and a standing phenomenal concept of my former experience. It is justified because of the constitution of the first belief by experience and of the second by constitution of a belief through experience together with a priori inference.⁸ But if we look at Jerry, we find that if she holds a standing belief about her experience before T, B_{T-} , and another about that after T, B_{T+} , she should be able to hold the belief that the contents of these beliefs B_{T-} and B_{T+} are different. That is, we do find after all that Jerry ought to be Ψ -aware of the change in Φ properties.

And, as previously, we find that on the C-P-Dualist picture, such Ψ -awareness is not possible on the assumption of the reducibility of Ψ -awareness properties to functional/physical properties. Hence a difference between Jerry's phenomenal epistemology and Mary's: Jerry cannot correctly

⁸ Note that there is no claim of infallibility of such a priori procedures.

differentiate between the standing beliefs B_T and B_{T^+} . This means that what constitutes the nature of Jerry's phenomenal experience is weaker than what we take to be our phenomenal experience, since standing beliefs are completely unreliable. When Jerry says she is certain of being Φ -conscious, this is therefore a weaker claim than the one we take ourselves to make. It pertains only to knowledge of instantaneous concepts which has no duration.

To increase the strangeness of the situation, one can consider another functional/physical duplicate of Jenny. Zerry lives in a world W_2 where phenomenal properties cease to be instantiated at all between T and T^+ . In line with the account given for Jerry, Zerry will have no Φ -consciousness (and therefore, of course, no Ψ -awareness either) of the disappearance at T or the re-appearance at T^+ of Φ properties. Zerry's claim to be certain of being Φ -conscious is also a weak one. Of course, when she is indeed experiencing Φ properties, there is an experiential component to her pure phenomenal concepts. This is what provides the justification for the phenomenal judgements (Chalmers, 1996, p.199). But she makes the same judgements whether or not there is such a component. Any certainty she has of being Φ -conscious is therefore restricted to the instant, since when she recalls the time between T and T^+ , although she can remember making the same judgements, she does not know that they were erroneous.

The failure of the second response

The problem with these weaker versions of the claim to certainty that we have found with Jerry and Zerry, is that, Jenny, who is living in our world, has no way of knowing that she is not in Jerry or Zerry's world, i.e. that she is not Jerry or Zerry. That is, for all she knows, she could be experiencing varying or disappearing Φ -properties, without knowing it. And of course, if this is true of Jenny, it is true of any one of us. This means that, within the framework of C-P-Dualism, the certainty I have of being Φ -conscious is not properly represented. Let us specify this claim.

What is problematic about Jenny's epistemic situation can be summarised as follows. It is that she cannot be sure of any phenomenal knowledge. That is, she cannot be sure about any claims she might make about her phenomenal experience. For any such claims involve second-order phenomenal properties (properties of the properties of the phenomenal experience), and these are necessarily relational properties. To know that such properties are instantiated however would require my ability to refer to the first-order properties of which they are predicated, after the occurrence of the phenomenal experience itself. But the truth-value of claims based upon such references is doubtful. For there are changes Jenny may not be aware of, or changes she wrongly takes to have experienced. That is, Jenny's Ψ -awareness is too disconnected from her Φ -consciousness for her to be able to have any kind of knowledge of her phenomenal experience, and thus to hold the kind of justified beliefs that I have about my phenomenal experience. As a result, Jenny's claim to have a justified belief she is Φ -conscious is whittled down to a very minimal one indeed, one that is a far cry from the justified belief I have of my own experience. To have a justified belief in the existence of something, while having doubts about anything that could be said about this something, is however to expose oneself to the full force of the kind of criticisms made by eliminativists. Moreover, since this justified belief is at the core of the argument for C-P-Dualism, its proper representation is essential to the cogency of this metaphysics of C-P-Dualism. This means that the inability to distinguish between standing beliefs arising from different Φ properties entails that the second response fails. Together with the problem encountered earlier, i.e. the inability to know whether or not the instantiated Φ properties have changed (original problem, and problem with the first response), and the inability to know they were absent in the Zerry case, we find states of affairs that are not acceptable for property dualism.

Implications for property dualism

Assuming the argument above to be correct, what is the dialectical situation? The situation we arrive at is that, however we interpret the phenomenal beliefs Jerry has, a proper representation of the certainty of being phenomenally conscious which constitutes the premise of his argument, is not possible within the framework of C-P-Dualism. We also found that, although the assumption of the logical supervenience of Ψ -awareness is central to the arguments above, dropping this assumption would not alone solve the problem. At best, (in the case of the first response) it would lead to identifying a failure of (Jerry's) rationality.

C-P-Dualism is therefore a metaphysical doctrine that is unable to correctly account for the epistemological facts upon which it is grounded. Although this does not amount to an internal contradiction, it nullifies the force of C-P-Dualism which is precisely to provide an account of Φ -consciousness that takes seriously the claim that we are justified in believing we are Φ -conscious (Chalmers, 1996, p.167). Without this, there remains little motivation for espousing such a dualistic metaphysical position. The question therefore is, where does the problem lie? We should start by revisiting the identification of the epistemic gap. The issue is clearly not one of denying the existence of such a gap, which is the strategy used by the materialist type A as Chalmers calls him (Chalmers, 1996). Rather, it must involve a closer characterisation of this gap, one which alters the ontological conclusions that can be derived from it.

Recall that the existence of epistemic gap translates the fact that it is not possible to explain properties of Φ -consciousness in terms of functional/physical properties. This means that Φ properties are disconnected from the functional/physical realm. This would seem to entail that it is arbitrary what specific Φ properties actually obtain. In describing the epistemic gap as that which lies beyond the purported supervenience base of functional/physical properties, one is thus led to overlook that Φ properties are properties the subject claims to be certain about. This involvement of the phenomenal in a claim about cognition is what lies at the root of the conclusions derived from the above thought-experiment. Namely, which Φ properties obtain cannot be viewed as a completely indeterminate matter, but one constrained by the epistemology of the conscious subject.

The argument shows that this constraint translates in terms of the epistemological impossibility of variable (or at some time inexistent) Φ properties. That is, Φ properties are required to be *temporally invariant*: within a given world, if at times t_1 and t_2 , all functional/physical properties are identical, so are all Φ properties. Indeed, since the situations represented by Jerry and Zerry's cases created insurmountable problems for the claim one is justified in the belief one is Φ -conscious, a proper representation of the epistemological claim underpinning the argument for property dualism requires restricting the range of possible worlds which are accessible to a conscious subject. This means that the vanishing of qualia (*fading qualia*), their springing into being (*appearing qualia*)⁹ or their variability over time (*dancing qualia*) are to be excluded as **epistemically impossible**. We therefore obtain a restriction upon worlds which further constrains that which is first defined in terms of mere logical possibility. Epistemically possible worlds are here defined as worlds a conscious subject could be in, given he makes the justified claim that all conscious subjects make, namely that of being certain of being Φ -conscious.

The redefinition of the epistemic gap which leads to the introduction of this notion of epistemic possibility, also has ontological consequences. For certain properties of Ψ -awareness, namely those of the Ψ -awareness of Φ experience, require the temporal invariability of Φ properties. This means that, across the ontological gap which separates functional/physical properties from Φ properties, lie Φ properties. These are clearly dependent upon functional/physical properties

⁹ Of course, since we are, in fact, phenomenally conscious, this is not a case relevant to our situation.

because of the constraints imposed upon them by neuro-physiological facts. But they are now also seen to exhibit some dependence upon Φ properties. This will be specified below.

The conclusions to be drawn can therefore be summarised as follows. First, the fact that zombie worlds are logically possible remains the key to Chalmers's (1996) identification of the epistemic and also the ontological gaps. This means that there is a dualism of properties, so that subjects who are functionally/physically identical, may experience different Φ properties.

Second, worlds featuring fading or dancing qualia are logically but not epistemically possible¹⁰. The epistemic constraints are the requirement of enabling the correct representation of the justification of the belief of being Φ -conscious within a property dualistic framework.

Third, this entails that Ψ -awareness is not independent of Φ properties. More specifically, properties of Ψ -awareness are dependent upon the temporal invariance of Φ properties. It therefore follows that properties of Ψ -awareness do not logically supervene upon physical/functional properties. At most, they may thus supervene *modulo* given (time-invariant) Φ properties.

Fourth, we can draw a further consequence from the fact that, given constant functional/physical-properties, a Φ property cannot alter over time. This is that epistemic normativity requires the *existence of Φ properties*. For, if the temporal invariability of these properties is required, this means that their very existence is relevant to the constraints of epistemic normativity. As a result, zombie worlds are also not accessible from the real world. That is, *zombie worlds are not epistemically possible*.

Fifth, the dependence of Ψ -awareness upon Φ properties is not causal since it is the mere existence of temporally invariant Φ properties that is required by the epistemology of the Ψ -awareness of Φ -consciousness. Consequently, this does not, as such, conflict with the closure of the physical domain. For it does not entail that judgements about one's phenomenal experience are causally dependent upon Φ properties.

The dualism which separates phenomenal from functional/physical properties, and which is grounded in the logical possibility of beings with no or different Φ properties, does therefore not account for the relation between the phenomenal and the psychological. This emerges as a relation of dependence of the latter on the existence of temporally invariant Φ properties, on the grounds of an epistemic normativity which is covert in the premise of Chalmers's argument.¹¹ The existence of temporally invariant Φ properties thus acquires the status of a *transcendental condition* for our cognition (or at least part of it), in the sense that it is an a priori condition for the possibility of such knowledge or justified beliefs about our Φ experience.

Epistemic necessity versus metaphysical necessity

This argument differs from the appeals to metaphysical necessity found in the literature. There is obviously a difference in the outcomes, since my argument upholds a dualistic ontology. But it is interesting to compare the argumentative strategies.

The usual strategy of the materialist type B, as Chalmers (1996) describes her, is to seek to show that a conceptual difference identified by the epistemic gap does not entail a difference

¹⁰ Chalmers notes in his discussion of the physical possibility of dancing qualia, that 'it is entirely implausible to suppose that my experiences could change in such a significant way (...) without my being able to notice the change' (Chalmers, 1996, p. 269). But the possibility evoked here is a physical one. He adds that it is 'only just logically possible' (ibid.). Although the logical possibility cannot be at stake here, his restriction fits in nicely with an intermediate form of possibility, one driven by epistemic considerations.

¹¹ An awareness of our phenomenally conscious mental states and their content is key to Chalmers's claim of direct access to his phenomenal experience (Chalmers, 1996, p.196). Although it is logically possible to imagine beings who are not thus related to their phenomenal experience (proto-zombies) this is not considered by Chalmers. This means that epistemic constraints are already built into the understanding of our phenomenal consciousness.

of properties. Many approaches have drawn upon Kripke's notion of a *posteriori* necessity. This amounts to claiming that a phenomenal concept can be identified with a functional/physical one *a posteriori* in the same way as water can be identified with H₂O *a posteriori*. That is, the apparent difference in properties is just an illusion that can be dispelled by a correct re-description of the property of phenomenal consciousness. Chalmers (1996) shows that this appeal to *weak metaphysical necessity* will not work, because the property of being phenomenally conscious (unlike that of being water) defines a perfectly good property in possible worlds. In other words, the problem with a posteriori necessity is that 'water=H₂O' is true in all possible worlds considered as *counterfactual* (with the actual world fixing the reference of 'water'), but what is at stake here is the consideration of possible worlds as *actual*. And if one could show that there are things that are H₂O in such worlds, but are not water, then one would have shown the property of being water is not that of being H₂O. In the case of Φ -consciousness, if zombies are logically conceivable, then Φ properties are not functional/physical properties.

Only appeals to a 'brute' notion of '*strong metaphysical necessity*' (Chalmers, 1996) hold any promise for the materialist B's approach. That is, considerations of a *posteriori* necessity aside, she must argue that there are metaphysical grounds for differentiating between what is logically conceivable and what is metaphysically possible: these must be *a priori*.

My strategy in this paper agrees with this approach only insofar as it views the ontology as not determined by mere considerations of logical possibility. The materialist B wants to introduce metaphysical necessity as a further restriction on possible worlds for the purpose of drawing ontological conclusions. In this paper, considerations of epistemic possibility are drawn upon to alter the conclusions obtained from mere logical possibility. But the restrictions introduced by metaphysical necessity in the first case, and epistemic possibility in the second, work in different ways. For the appeal to strong metaphysical necessity consists in claiming that phenomenal concepts have special features but actually refer to functional/physical properties. These special features may be expressed in terms of indexicality (Perry, 2001), of quotations (Papineau, 2002), etc. But whatever these features are, their common characteristic is that they purport to block the move from merely conceptual considerations to ontological ones by introducing a restriction upon possibility. My approach, on the contrary, is to accept the move from the conceptual to the ontological level, but to introduce a restriction upon possibility on the grounds of further requirements that are epistemological. The consequence is that rather than undercut the argument for dualism, the notion of epistemic necessity provides further constraints upon the structure of the dualist ontology. This ontology is therefore no longer C-P-Dualism, but an epistemically constrained dualism of properties that I shall refer to as *Epistemic Property Dualism* (E-P-Dualism).

Some speculations about the meaning of E-P-Dualism

This dependence of aspects of our cognition (expressed in terms of properties of Ψ -awareness) upon Φ -consciousness may appear surprising, but it is worth noting that we have not shown that coherent beliefs and therefore knowledge *per se* are impossible without qualia. Rather, given that we are beings with phenomenal experience, incompatible beliefs (e.g. the belief one is Φ -conscious over a period of time, and the belief one does not know whether one was conscious in the past) would result from the absence or alteration of our Φ properties. This does not exclude the possibility of forms of knowledge which might not require qualia: one might want to talk of the knowledge possessed by a machine with no phenomenal experience for instance. Such a machine is a logical possibility.

The knowledge possessed by such a machine would however be distinct from ours, since the phenomenal cannot be extricated from our cognition. And the question would therefore be whether this machine could be said to have knowledge at all.

To say that this would not be knowledge might seem to amount to an anthropocentric view of knowledge. However, such a view could also be based upon the claim that the rôle played by the phenomenal cognition is deeper than so far suggested. Let us examine this possibility.

What we know is that the existence of temporally invariant Φ properties is required for a satisfactory account of that part of our Ψ -awareness whose content is directly related to phenomenal experience. It may be that Φ properties are only relevant to that part of our cognition. In this case, the having of phenomenal experience would serve no cognitively relevant purpose. That is, Φ properties would supervene upon functional/physical properties modulo the existence of temporally invariant Φ properties.

But Φ properties, which are intrinsic, have themselves relational properties. It is these which, arguably, proponents of functional reductionist views consider as ultimately the only properties to be accounted for (e.g. Dennett, 1988). Whether or not these second-order properties are obviously reducible to functional rôles is a matter we cannot discuss here. But that they have a rôle in cognition is beyond doubt. For instance, the associations that arise through the knowledge of phenomenal qualities have an important problem-solving rôle to play. I would argue, moreover, that it is precisely such associative properties that lie at the core of much of our worldliness, i.e. of our pre-cognitive understanding of the world of our practical involvements (e.g. as discussed in Clarke, 1997, Dreyfus & Dreyfus, 1990).

These issues cannot be discussed in the context of this paper, but such a rôle for Φ properties would amount to making them into *transcendental conditions* not only of our cognition, but more broadly of the intelligibility of that which are familiar with, i.e. of 'our' world.

Before leaving these speculations aside, I would however point to an important issue that would need to be addressed. This is whether the deeper involvement of Φ properties in our cognition would conflict with the claim of the causal closure of the functional/physical domain. If it were to do so, it would conflict with some deep seated intuitions, and a strong case would have to be made if the latter are to be abandoned.

Conclusions

In this paper, I have addressed the problems arising within the framework of C-P-Dualism from the consideration of possible worlds with temporally varying, fading (or appearing) Φ properties. I have argued that the consideration of such scenarios threatens the justified belief that we share about our having phenomenal experience. The only way of dealing with these problems is to make worlds defined by such Φ properties (or indeed no Φ properties) inaccessible to us. The resulting ontology of E-P-Dualism preserves the duality between functional/physical and Φ properties, while properties of Ψ -awareness occupy a bridging status, grounded as they are in both these types of properties.

I shall indicate two important virtues of the proposed property dualism. First, it avoids the (quasi-)epiphenomenalistic position characteristic of C-P-Dualism whereby Φ -properties have no explanatory rôle to play. For such a position is rather unsatisfactory, as many commentators have pointed out (e.g., Seager, 1991). This is because it leaves Φ properties with no explanatory rôle in our behaviour. Second, and more importantly, in terms of the explanatory value of the theory, the 'remarkable coherence between conscious experience and cognitive structure' which Chalmers (1996, p.218) examines, is no longer an explanandum. The coherence in question is that which ensures that the structure of my phenomenal experience is reflected in my awareness. Typical structural features are aspects of the geometry of my visual field, implicit relations within this field (e.g. between complementary or similar colours), relations of intensity between Φ properties, ... Such features are mirrored in the representations which feature more or less explicitly in our cognitive processes, and which characterise our Ψ -awareness.

The fact that C-P-Dualism has to appeal to a principle of mutual coherence (ibid., p.225) to account for the coherence between the structure of Φ consciousness and that of Ψ awareness, would seem to be a major disadvantage of this theory. For an appeal to a harmony between two domains - a harmony that is not accounted for within the framework of the theory - must be viewed as an explanatorily weak aspect of a theory.

In the case of E-P-Dualism however, the coherence between experience and cognition results directly from the linkage between Φ -properties and properties of Ψ -awareness. This constitutes an important theoretical advantage over other forms of property dualism.

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