

GAPPINESS AND THE CASE FOR LIBERALISM ABOUT PHENOMENAL PROPERTIES

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Conservatives claim that all phenomenal properties are sensory. Liberals countenance non-sensory phenomenal properties such as what it's like to perceive some high-level property, and what it's like to think that p. A hallmark of phenomenal properties is that they present an explanatory gap, so to resolve the dispute we should consider whether experience has non-sensory properties that appear 'gappy'. The classic tests for 'gappiness' are the invertibility test and the zombifiability test. I suggest that these tests yield conflicting results: non-sensory properties lend themselves to zombie scenarios but not to inversion scenarios. Which test should we trust? Against Carruthers & Veillet, I argue that invertibility is not a viable condition of phenomenality. In contrast, being zombifiable is credibly necessary and sufficient for phenomenality. I conclude that there are non-sensory properties of experience that are 'gappy' in the right way, and that liberalism is therefore the most plausible position.

Keywords: consciousness, cognitive phenomenology, high-level perception, the explanatory gap, conceivability argument.

I. CONSERVATISM AND LIBERALISM ABOUT PHENOMENAL PROPERTIES

I.1. The debate

This morning I gazed at a banana. When I did so I was aware of various things. I was perceptually aware of the low-level properties of the object before me including its colour, size and shape. I was also perceptually aware of some of the object's high-level properties, such as its property of being a banana. Furthermore, I was non-perceptually aware of my concurrent cognitive state: specifically, of my thought that *this banana is just ripe enough to eat*. These are all things of which I was aware at a specific time, but did they figure in my phenomenology? Put another way, did my awareness of each of these properties make a distinctive contribution to *what it was like to be me* as I gazed at the banana? Reflecting on my experience, I would answer this question in

the affirmative. This exemplifies my *liberalism* about phenomenal properties. Conservatives, however, would reject this rich description of my experience in favour of a more sparse account. They would say that my phenomenology was exclusively characterized by awareness of low-level properties: my perception of the object's colour contributes a *yellow-ish* phenomenal quality to my experience, but my perceptual categorization of that object does not add a *banana-ish* quality and my concurrent thought that *p* does not contribute a *p-ish* quality. Liberals and conservatives thus give competing accounts of the richness of our phenomenology. In this section, I will attempt to capture what their disagreement consists in before outlining how I intend to build my case for liberalism.¹

The debate between liberals and conservatives can be framed in terms of the following target question: *Are there non-sensory phenomenal properties?*² Liberals answer 'yes' to this question while conservatives answer 'no'. By clarifying the terms of the target question, we can go some way towards capturing the substance of the dispute. As we will see though, this is a debate that resists rigorous formulation and it is sometimes unclear what the disagreement amounts to.

I will start with a few clarifications regarding the sensory/non-sensory distinction. The examples of phenomenal properties standardly put forward by conservatives include colours, tastes, smells, sounds, itches and pains. These are all sensory phenomenal properties in that they are features of our perceptual experience of low-level properties of our body and environment. I will use the phrase 'sensory phenomenal properties' to refer to all and only those phenomenal properties countenanced by conservatives. One complication here is that this set has fuzzy boundaries. It is unclear, for instance, whether conservatives should countenance affective properties such as the feeling of being angry, agentive properties such as the feeling of performing an action or egological properties such as the sense of ownership. These contentious cases need not detain us: the arguments I wish to discuss can be adequately evaluated in terms of those phenomenal properties on which conservatives give a clear verdict.

I intend the phrase 'non-sensory phenomenal properties' to refer to all and only those phenomenal properties that would constitute a counterexample to conservatism.² We can divide these would-be phenomenal properties into two broad categories. First, *high-level perceptual phenomenal properties* are those properties (if such there are) that feature in our perceptual experience of

¹ Although this paper focuses on the contemporary debate between conservatives and liberals, it should be noted that the dispute has a long history. Excellent overviews of the debate's history are offered by both Siewert (2011) and Prinz (2011).

² One might have a technical understanding of 'sensory' such that properties accepted by conservatives would still count as non-sensory, and properties accepted only by liberals would still count as sensory. I am not using the term with any such technical meaning.

high-level properties of our body or environment. We might, for instance, perceive an object as having the high-level property of being a banana. If our experience features a banana-ish quality, this would be a high-level perceptual phenomenal property. The same goes for experiencing something as being a stethoscope, being a pine, being Angela Merkel, being good or being beautiful. Secondly, *cognitive phenomenal properties* are those properties (if such there are) that feature in our non-perceptual awareness of our own cognitive episodes. The classic cases of cognitive episodes are those mental states in which a subject adopts a propositional attitude towards some propositional content. We might, for instance, doubt that the banana is ripe enough to eat, believe that the tree is a pine or hope that Angela Merkel is good. If there are distinctive phenomenal properties that characterize our experience of these cognitive episodes, then those properties would be cognitive phenomenal properties.

The debates surrounding high-level perceptual phenomenology on the one hand, and cognitive phenomenology on the other, are by-and-large distinct. After all, it seems that one could coherently accept the existence of one category of phenomenal property whilst denying the existence of the other. Why, then, am I considering these two categories together under the heading of ‘non-sensory phenomenal properties’? I have three related reasons for this: (1) as a matter of fact, most who accept the existence of phenomenal properties in one category accept the existence of those in the other, indicating that there is a single overarching dispute concerning all non-sensory phenomenology (see Bayne 2009: 404); (2) it is credible that what is at stake in the dispute is whether conceptual representation has a phenomenology, and since both cognitive awareness and high-level perceptual awareness are plausibly conceptual their respective fates may be bound (see Carruthers and Veillet 2011: 35); and (3) the arguments I will go on to consider concern our criteria of phenomenality as such and are equally relevant to both kinds of non-sensory awareness, so should not be evaluated with reference to just one category.

I hope to have shed some light on the kind of phenomenal property that is under contention. The next task is to say a little more about what it means to be phenomenal. Both sides agree, or at least *ought to* agree, that we can be aware of non-sensory properties (on a weak reading of ‘aware’ that does not presuppose phenomenality). The question is whether being aware of a non-sensory property makes a distinctive contribution to our phenomenology. Such a contribution is made only if there is *something in particular it’s like* to be aware of that non-sensory property. In other words, our awareness of a non-sensory property must: (1) make *some* difference to our phenomenology; and (2) make a *distinctive* difference that cannot be reduced to changes amongst the other phenomenal properties of our experience.³ This second clause is crucial.

³ The notion of *distinctive* phenomenological contributions seems to be in line with Carruthers & Veillet’s notion of *constitutive* contributions, which they contrast with merely *causal* contributions (2011: 37).

Many conservatives accept that non-sensory awareness makes a difference to our phenomenology but hold that such differences are exhausted by changes to the *sensory* phenomenal properties of our experience. For instance, your thought that *the banana is ripe enough to eat* might involve an inner vocalization of a sentence expressing this thought. This inner vocalization will contribute various auditory sensory phenomenal properties to our experience, but no non-sensory phenomenal property characteristic of *thinking that p* is added to our experience (Prinz 2011; Robinson 2005).⁴ Liberalism is true if and only if the phenomenology of non-sensory awareness *outstrips* the phenomenology of sensory awareness.

Asserting the existence of non-sensory phenomenal properties should not be confused with any of the *stronger* claims that might be made by liberals. First, some liberals make bold claims about the vast *variety* of non-sensory phenomenal qualities, but our target question asks only whether there are *any* such qualities. Secondly, some liberals claim that one can enjoy phenomenal states that feature exclusively non-sensory properties. The target question concerns only whether non-sensory phenomenal properties exist, not whether they can be instantiated in isolation from other phenomenal properties. Thirdly, some liberals claim that being in a state with certain non-sensory phenomenal qualities is necessary and/or sufficient for being in a state with a certain content. This kind of modal claim is beyond the scope of the target question.⁵

I.II. *The challenge*

Now that we've gone some way towards pinning down the target question, we can begin to reflect on why that question is so difficult to answer. There is relatively little controversy regarding the existence of sensory phenomenal properties like pain or qualitative red-ness. Why, then, should there be such deep disagreement regarding the existence of non-sensory phenomenal qualities? Since liberals and conservatives presumably have the same kind of phenomenology, it looks like their disagreement must be about the conditions of phenomenality i.e. about what it takes to qualify as a phenomenal property. Perhaps if some consensus about our criteria of phenomenality could be reached, we would be in a position to resolve the debate. This is

⁴ Conservatives differ on whether denying the existence of non-sensory phenomenology means denying that thoughts have a phenomenology. Robinson (2005), for instance, concludes that thoughts do not have phenomenal properties. Prinz (2011), by contrast, claims that thoughts *do* have phenomenal properties but that they are all sensory phenomenal properties. This subtle distinction is worth noting, but need not detain us.

⁵ For instance, in Pitt's (2004) case for liberalism he (a) argues that every propositional content has a different phenomenology; (b) does not rule out the possibility of experiences with cognitive but no perceptual phenomenology; (c) argues that conscious thoughts have their content in virtue of their phenomenology. In contrast, Siewert's (2011) case for liberalism explicitly resists all three of these commitments.

an appealing strategy in principle, but implementing it is extremely challenging. One might try to analyse the concept of phenomenality into more basic concepts, but phenomenality is notoriously resistant to such analysis. One might instead attempt to identify some useful synonyms of phenomenality, such as ‘consciousness’, ‘experience’ or ‘what-it’s-like-ness’, but rather than disambiguating the target concept these synonyms simply inherit its ambiguity.

Perhaps the most striking feature of phenomenal properties is that they appear to present an explanatory gap: it seems that no amount of physical or functional information about a subject can explain why they instantiate the phenomenal properties they instantiate. Perhaps, then, we can use *gappiness* as a test of phenomenality, and apply this test to determine whether our experiences have non-sensory phenomenal properties. It is this strategy for resolving the debate that I wish to explore.

Carruthers & Veillet (2011) use the ‘gappy’ condition to build a case *against* liberalism, and in Section II I defend liberalism against this argument. They build their case on the observation that non-sensory properties do not lend themselves to *inverted spectra* scenarios. I concede that non-sensory properties do not appear invertible, but deny that invertibility is a credible condition of phenomenality. I also consider an alternative version of this argument based instead on zombie intuitions. I concede that being ‘zombifiable’ is a credible condition of phenomenality but argue that non-sensory properties can satisfy this condition. In Section III, I move from a defensive to an offensive stance. I argue that being ‘zombifiable’ is not just a necessary but a *sufficient* condition of phenomenality. Since non-sensory properties lend themselves to zombie scenarios, we ought to adopt liberalism about phenomenal properties.

II. A GAP-BASED ARGUMENT FOR CONSERVATISM

II.1. *The initial gap-based argument for conservatism*

Carruthers & Veillet propose that ‘[a] property is phenomenal only if it contributes to the hard problem of consciousness, and in particular, only if it gives rise to an explanatory gap.’ (2011: 11) A property is phenomenal only if it is *gappy*, and is *gappy* just in case it appears to be such that its instantiation cannot be deduced from the physical and functional facts about the subject instantiating it.⁶ If a property fails to present an apparent explanatory gap, then it is not a phenomenal property. It is crucial to recognize that this condition requires an apparent explanatory gap and *not* the metaphysical gap

⁶ A proviso is needed here. We do not want indexical facts to come out as gappy, so the conditional must be read as concerning centred possible worlds. Thanks to Sam Coleman for highlighting this.

that is sometimes inferred from this: there is no commitment to phenomenal properties being non-physical properties. Furthermore, it must be recognized that the condition requires only a *prima facie* explanatory gap, not an *ultima facie* explanatory gap. Some claim that phenomenal properties will ultimately be explained in physico-functional terms, but even they will generally concede that there is an *apparent* explanatory gap. The condition does not involve a commitment to the explanatory gap being unbridgeable (Carruthers and Veillet 2011: 44 ft.6). Although there are many controversies surrounding the explanatory gap, it is the relatively uncontroversial *appearance of gappiness* that is being used as a condition of phenomenality.

Does using gappiness as a condition of phenomenality fit with how phenomenal properties are generally discussed in the literature? When introducing the concept of phenomenality most philosophers appeal to gappiness: they contrast those aspects of consciousness that do appear deducible from the physico-functional facts with those aspects that do not, and explain that only the latter qualify as phenomenal. Some go a step further and explicitly build gappiness into the definition of phenomenality. Kriegel, for instance, recommends ‘... fixing the reference of the technical term “*phenomenal* consciousness” with the following rigidified definite description: “the property F, such that, in the actual world, F is responsible for the mystery of consciousness.”’ (2009: 3). Clearly our understanding of phenomenal properties is bound up with their apparent gappiness.

After claiming that gappiness is a condition of phenomenality, Carruthers & Veillet go on to present their case for conservatism, which I summarize as follows:

- CON₁) There are no non-sensory properties that appear gappy.
- CON₂) A property is a phenomenal property only if it appears gappy.
- CON₃) Therefore there are no non-sensory phenomenal properties.⁷

The conclusion—a vindication of conservatism—clearly follows from the two premises. However, the evaluation of those two premises is complicated by the fact that there is more than one respect in which a property might appear gappy. The explanatory gap is bound up with the conceivability of duplicates like us in all physico-functional respects but who differ from us phenomenally. When reflecting on whether non-sensory properties appear gappy we should

⁷ This is somewhat more simple than the six-step argument that Carruthers & Veillet (2011: 45) present. Their formulation adds that a property is gappy only if our concept of that property is *conceptually isolated*. I avoid this complication for two reasons: (a) I am not convinced that our grip on what it is to be conceptually isolated is independent of our grip on the explanatory gap, meaning that a premise concerning conceptual isolation would be dialectically redundant; (b) I am about to argue that there are two kinds of gappiness, and this claim is hard to frame in terms of conceptual isolability. As such, using this notion to formulate the argument would only confuse matters.

consider whether they lend themselves to the leading conceivability tests. The two classic tests are inversion scenarios and zombie scenarios. When asking whether a property appears gappy we might be asking: (1) whether that property appears *invertible*; or (2) whether that property appears *zombifiable*. As it stands, CON is thus ambiguous between two readings: if we read ‘gappy’ as ‘invertible’ we get one argument, while if we read ‘gappy’ as ‘zombifiable’ we will get a different argument. I will label the first disambiguation ‘INV’ and the second ‘ZOM’.

A critic might object that CON is perfectly well formulated as it stands and that the distinction between INV and ZOM is entirely unnecessary. Appearing invertible and appearing zombifiable come hand in hand, so a property cannot be gappy in one way without being gappy in the other. The two conceivability tests are just different ways of making manifest a single underlying explanatory gap. This means there is no room for us to reach different verdicts on the two formulations of CON. Against such a critic I would insist that inversion and zombie intuitions *do* come apart. Specifically, I will be arguing that although non-sensory properties do not appear invertible, they do appear zombifiable. This means that the ambiguity of CON renders it unfit for purpose and that we must carefully separate our evaluation of INV from our evaluation of ZOM.⁸

II.II. *The invertibility argument for conservatism*

The inversion-based disambiguation of CON is as follows:

- INV₁) There are no non-sensory properties that appear invertible.
- INV₂) A property is a phenomenal property only if it appears invertible.
- INV₃) Therefore, there are no non-sensory phenomenal properties.

Let’s begin with an evaluation of INV₁. What would it mean for non-sensory properties to appear invertible? Consider the classic case of colour-quality inversion (Shoemaker 1982). As we undergo a perceptual experience of a red tomato, we can conceive of a duplicate who is like us in all physico-functional respects but whose colour experience is inverted relative to our own. Their experience as they look at the tomato features the quality we experience when looking at green grass, and their experience as they look at green grass features the quality we experience when looking at the red tomato. The sensory colour qualities of which we are aware thus appear to be invertible. The question is whether the non-sensory properties of which we are aware also lend themselves to inversion scenarios.

⁸ I am rejecting the assumption that the two conceivability tests (and related thought experiments) offer different routes to the same explanatory gap. This raises the interesting possibility that there is more than one explanatory gap. I explore this possibility closely in my 2011 and 2014.

Carruthers & Veillet ‘... focus on the conceivability of inverted experience...’ (2011: 45) and make a simple but effective case against non-sensory properties appearing invertible. They consider the classic duck/rabbit case in which we have a high-level perceptual experience of an ambiguous image *as a duck*, and then switch to experiencing it *as a rabbit*. They suggest that when experiencing the image as a duck we cannot intelligibly ask ourselves ‘Why does this experience (the duck-like one) represent a duck as opposed to a rabbit?’ (2011: 48). We cannot imagine someone like us in all physico-functional respects but who has the duck-like experience when seeing the image as a rabbit, and the rabbit-like experience when seeing the image as a duck. When we are aware of the non-sensory property of *being a duck*, we are not aware of a property that appears invertible.⁹

The same would hold for cognitive awareness. When we experience the thought *that ducks are cute*, we cannot imagine someone like us in all physico-functional respects but who is undergoing the experience we have when thinking *that rabbits are cute*. When we are aware of the content of our cognitive episodes, we are not aware of any non-sensory properties that appear invertible. Perhaps our cognitive experience is associated with various *sensory* properties that *do* appear invertible, but that is by-the-by.¹⁰

The apparent uninvertibility of the properties discussed seems to be representative of *all* non-sensory properties. Consequently, we ought to accept the truth of INV₁. What about INV₂? Classic phenomenal properties such as qualitative redness appear invertible, but is invertibility credibly a *necessary condition* of phenomenality? I suggest that there are a number of sensory phenomenal properties—properties countenanced as phenomenal by conservatives—that do not appear invertible. As such, INV₂ is far too demanding and cannot be sustained. I first consider cases of uninvertible experiences of primary qualities and then some cases of uninvertible experiences of secondary qualities.

Bayne notes that ‘... it is much harder to construct plausible inverted spectra cases for experiences of ‘primary qualities’, such as texture, solidity, distance and temporal relations, than it is for experiences of secondary qualities’ (unpublished manuscript: 42). For example, it is hard to imagine a subject like us in all physico-functional respects but who, when presented with a sphere, has the experience we have when presented with a cube, and vice versa. Our perception of primary qualities such as shapes is clearly phenomenal: it makes a difference to what it is like to be in the conscious state we are in, and the difference it makes cannot be reduced to differences among some other class of

⁹ Here I grant for the sake of argument Carruthers & Veillet’s implicit claim that substitution of duck phenomenology for rabbit phenomenology could be described as inversion. It might, of course, be objected that ducks are not the ‘opposite’ of rabbits in any useful sense.

¹⁰ Of course, *some* will report the intuition that inversion is conceivable in both the duck/rabbit case and the cognitive case. I will not attempt to undermine such intuitions here, but do note that it would be unfortunate if the case for liberalism relied on such a contentious position.

phenomenal property. Therefore, apparent invertibility cannot be a necessary condition of phenomenality.

Carruthers & Veillet respond that ‘... even if it is hard to spell out a detailed description of a world that would render the relevant counterfactual true, one can nevertheless think, “This very [cube-like] experience might not have represented cube-hood”’ (2011: 52). In a counterfactual scenario where the physics of the world is very different, cube-like experiences could track the presence of spheres. However, even if we grant that cube-like experiences might not have represented cube-hood, it’s not clear that this would help Carruthers & Veillet escape Bayne’s objection. Remember, the point of inversion scenarios is that they hold the physical and functional facts constant. We can imagine a colour-quality invert like us in all physico-functional respects, and can even imagine them living in a wider world just like ours. The scenario alluded to by Carruthers & Veillet explicitly involves physical changes to the subject and/or their environment. As such, the scenario is not an *inversion* scenario in the sense relevant to us here. Since their defence against Bayne is off the mark the conclusion still stands that invertibility is not a viable necessary condition of phenomenality.¹¹

The problems for INV2 don’t stop at primary qualities. There are also many secondary qualities that resist inversion. The apparent invertibility of colour qualities relies on the fact that the state-space of colour qualities is (roughly) symmetrical. This means that for each colour quality of our experience, we can imagine the ‘opposite’ quality characterizing the experience of our inverted duplicate. The problem is that many secondary qualities do not have this kind of symmetry. The state space of olfactory experience, for instance, is incredibly complex (Young, Keller and Rosenthal 2014). When we smell a rose, what would the experience of my olfaction-inverted twin be like? I’m not sure I can conceive of an olfaction-invert, yet I would not want to deny that there is a distinctive phenomenal quality to my olfactory experience of the rose. Similarly, when I have the gustatory experience of the *umami* flavour, what would the experience of my gustation-inverted twin be like? There is a distinctive umami-ness to my experience but I have no idea what the opposite of this quality would be. The fact that umami has the interesting property of heightening the experience of *other* flavours complicates things. Am I to imagine that my twin’s experience of other flavours is *lessened* when they taste umami? Given that my invert twin must have the same dispositions as me to report the strength of flavours, this would create an uncomfortable mismatch between my invert’s functional profile and his phenomenology.

¹¹ Carruthers & Veillet point out that *not all* experiences of primary qualities resist inversion (2001: 51). However, given that any counterexamples to the proposed necessary condition are fatal, this observation is not of much help.

The invertibility-based argument for conservatism fails. While it is true that non-sensory properties do not appear invertible, it is false that invertibility is a necessary condition of phenomenality. Liberals can concede that non-sensory properties do not lend themselves to inversion scenarios whilst maintaining that they are nevertheless phenomenal properties.¹²

II.III. *The zombifiability argument for conservatism*

If the initial argument for conservatism is instead disambiguated in terms of the conceivability of zombies, we get the following argument:

ZOM₁) There are no non-sensory properties that appear zombifiable.

ZOM₂) A property is a phenomenal property only if it appears zombifiable.

ZOM₃) Therefore, there are no non-sensory phenomenal properties.

Evaluating ZOM₁ requires careful work. A property is zombifiable just in case it is *prima facie* conceivable that we have that property while a physico-functional duplicate of us lacks that property. A first pass at ‘zombifying’ non-sensory properties might go as follows: take an experience in which you are aware of a non-sensory property, then try to conceive of a duplicate like you in all physico-functional respects but who lacks any phenomenal properties. The difficulty with framing things this way is that it assumes an uncontroversial extension of ‘phenomenal property’. To avoid begging any questions, we must be neutral on whether the properties lacked by the zombie are phenomenal properties. Consequently, we should describe a zombie as a *minimal physico-functional duplicate* i.e. as a being like you in all physico-functional respects but who lacks any properties (whatever they might be) besides those physico-functional properties and whatever logically supervenes on them.

This second pass at the zombie test is still not adequate. Conceiving of your zombie duplicate involves ‘subtracting’ some of the properties you have whilst leaving all your physical and functional properties intact. But why think that the properties you have subtracted are non-sensory? The conservative will just say that when we are aware of non-sensory properties our phenomenology features exclusively sensory properties, and that when we conceive of our zombie duplicate we are simply subtracting these sensory properties (Carruthers and Veillet 2011: 51). Consequently, no *non*-sensory properties are being ‘zombified’ in this thought experiment.

¹² It sometimes seems that Carruthers & Veillet (2011) would be happy to soften the invertibility condition to a more modest condition of *alterability*. In an alteration scenario, we imagine a physico-functional duplicate of ourselves whose phenomenal properties are *different* from our own but not necessarily *inverted* relative to ours. However, parallel objections apply to this softened condition. Furthermore, it is less clear that non-sensory properties fail to satisfy the softened condition.

To avoid this worry, we need to take a third pass at the zombie test that homes in on specifically non-sensory properties. This can be achieved with the notion of *partial* zombies like us with respect to all physico-functional properties *and* with respect to all our sensory phenomenal properties.¹³ If we conceive of such a being, then it will specifically be the non-sensory properties of our experience that we have zombified. The conservative hypothesis that the duplicate differs from us only with respect to sensory qualities is blocked by the stipulation that its sensory phenomenal properties are the same as ours. I will apply this refined test to a case of high-level perceptual awareness and to a case of cognitive awareness.

Consider the following sequence of experiences, one might have when looking at a duck/rabbit image. At t_1 , you see the lines on the page but don't see them as anything in particular: you are aware exclusively of the low-level properties of the image such as its shape and colour. At t_2 , you see the lines as depicting a duck: you are perceptually aware of the high-level property of duck-ness. At t_3 , you switch to seeing the image as a rabbit: your perceptual awareness of duck-ness is replaced by a perceptual awareness of rabbit-ness. The properties of your experience change through times t_1 , t_2 and t_3 but are any of these changes 'zombifiable'? To answer this, we must compare your experience to that of your partial-zombie twin.

At t_1 , your twin experiences the low-level properties of the image: for example, it experiences the colour and shape of the lines that constitute the picture. At t_2 , your twin's physico-functional profile changes as yours does: for instance, it gains a disposition to say 'this picture is of a duck' when asked, and undergoes corresponding changes to its neurological state. It is also plausible that certain aspects of the twin's sensory phenomenology change. It might have an imaginative low-level visual experience of ducks (Price 2009), an imaginative auditory experience of the word 'duck' (Prinz 2012), an emotional sense of recognition (Prinz 2012), an emotional response to the category represented (Briscoe 2015) or a change in how attention is distributed over the low-level properties of the image (Briscoe 2015; Carruthers and Veillet 2011; Price 2009; Prinz 2012). If *your* experience at t_2 features any of these sensory properties then, *ex hypothesi*, so too will that of your partial-zombie twin. At t_3 , the twin's physico-functional profile changes once more: they gain the disposition to say 'it might also be a picture of a rabbit' when asked, and there would again be

¹³ Horgan (2011: 61) suggests the same manoeuvre in the context of formulating zombie scenarios for agentive and cognitive experiences. Kriegel (2015) also appeals to a partial zombie to make his case for cognitive phenomenology, though his zombie is quite unlike the one I describe. Where my zombie has sensory phenomenology but lacks cognitive phenomenology, Kriegel's zombie has cognitive phenomenology but lacks sensory phenomenology. Although Kriegel's thought experiment helps show that cognitive phenomenology is irreducible to sensory phenomenology, it does not help demonstrate the 'gappiness' of said phenomenology. This is why our thought experiments diverge.

some corresponding neurological change. Similarly, there might be relevant changes to their sensory phenomenology, such as coming to visually imagine rabbits.

Now think about your own experience through times t_1 , t_2 and t_3 . Is it just the same as your partial-zombie twin's or does your experience have properties that are absent in the twin's experience? At t_1 , your experience will be much the same as your twin's: you experience only the low-level properties of the image and your twin does the same. At t_2 , you experience the image *as a duck*. I suggest that this phenomenal change *outstrips* the phenomenal changes experienced by your partial-zombie twin. Like them your physico-functional properties change, and like them you might undergo various changes to your sensory phenomenal properties, but only you experience the image *as a duck*. Similarly, at t_3 you visually experience the image *as a rabbit*, and seeing it *as a rabbit* adds a property to your experience that is absent in the experience of your partial-zombie twin at t_3 .

Although the partial-zombie undergoes various changes to its physical properties, functional properties and sensory phenomenal properties, there is an important sense in which the image *looks the same way to them* through t_1 , t_2 and t_3 . For you, however, the image looks *different* in all three cases, meaning your experience differs from that of your twin in these respects. Since your twin is *ex hypothesi* like you in all physico-functional respects, the properties your twin lacks are zombifiable. And since your twin is *ex hypothesi* like you with respect to all sensory phenomenal properties, the properties zombified must be non-sensory. Consequently, we should conclude that our high-level perceptual experience of the duck/rabbit features zombifiable non-sensory properties.¹⁴

Carruthers & Veillet briefly discuss this kind of attempt to create a zombie scenario for our experience of the duck/rabbit and object that 'While such a zombie does seem conceivable... there is no way of telling whether the concept-zombie's deficit is that his concepts are incapable of making a constitutive contribution to his phenomenal life, or whether they merely fail to have any causal impact upon the latter' (2011: 51). In other words, we might just be imagining a case in which a subject's high-level perception does not bring about the low-level changes to sensory phenomenology associated with seeing the image as a duck. However, it is precisely this response that the partial-zombie twin scenario was meant to block: the twin has the same sensory phenomenology as we do yet still differs from us phenomenally, so the relevant difference cannot be one of sensory phenomenology.

¹⁴ A case can be made for thinking that visual agnosiacs have perceptual experiences like ours in all low-level respects but which lack a high-level perceptual phenomenology (Bayne 2009). Since visual agnosiacs suffer functional impairments they don't qualify as partial zombies. Nevertheless, it is interesting to note that there are real-life cases that highlight the kind of phenomenal difference under discussion.

Is our awareness of cognitive episodes similarly characterized by zombifiable properties? To answer this question, I adapt a thought experiment from Horgan (2011: 69–72). When making a case for cognitive phenomenology liberals often cite the experience of *understanding* the meaning of a sentence (e.g., Pitt 2004; Siewert 2011). Perhaps, then, we can contrast the experience *we* have when we understand a spoken sentence with the experience our *partial-zombie twin* has when it understands a spoken sentence. Imagine that at t_1 you hear a sentence in French without understanding it. Now imagine that the sentence is repeated at t_2 and that this time you fully understand it. Specifically, let's say that you recognize that the sentence means *that ducks are cute*. I think that many of us have had this kind of experience when we have some knowledge of a language but are not fluent.

What happens to your partial-zombie twin during this episode? Like you, at t_1 they would lack the physico-functional properties associated with understanding the uttered sentence. They would be disposed to ask the speaker to repeat themselves and would not have the dispositions needed to continue the conversation intelligently. At t_2 , their physico-functional profile changes as yours does. They will now be in a position to intelligently respond to the utterance in a way that displays understanding, such as saying something like 'I agree, ducks *are* cute' (or the French equivalent). How does the partial-zombie's *experience* change at t_2 ? Their sensory experience of the utterance will be much the same, apart perhaps from perceptually parsing the utterance into syntactic units. They may also undergo changes to their imaginative experience, such as coming to visually imagine ducks (Prinz 2012). Again, if you undergo these changes to your sensory experience then so does your duplicate.

Is your experience of this episode the same as your partial-zombie twin's? I would suggest that at t_2 you come to experience something that your twin does not: you come to experience the proposition *that ducks are cute*.¹⁵ None of these sensory phenomenal properties shared by you and your twin exhaust what it's like to *understand* the sentence. There is thus a non-sensory cognitive component to your experience that is lacking in your partial-zombie twin.

In passing, Carruthers & Veillet suggest that to regard cognitive episodes as zombifiable would require one to incoherently think that 'The thought that polar bears are endangered might not have had the content *polar bears are endangered*' (2011: 54). I agree with Carruthers & Veillet that this thought is incoherent but disagree about it being a relevant analogue of the classic zombie scenario. 'Zombifying' cognitive phenomenology does not mean imagining a subject who is in a state with the same cognitive phenomenology as you but with

¹⁵ Because this scenario concerns our experience of an utterance one might regard it as a case of perception rather than cognition. Since we seem to experience the *propositional content* of the utterance, I think there are good grounds to regard it as a case of cognitive experience. Alternatively, the scenario can be adjusted so that the sentence in question is not a public utterance but rather an inner episode, making it much harder to regard as perceptual.

a different content. Rather, it means imagining someone who is in the same cognitive state as you—a state representing just the same proposition with just the same propositional attitude—but who lacks the associated phenomenology. This is far from incoherent.

Some may still have the conservative intuition that the phenomenal changes highlighted in the two scenarios described are all exhausted by changes in sensory phenomenology, meaning your twin has precisely the same experiences you do. This would be in line with the conservative suggestion that all putative cases of non-sensory phenomenal changes are nothing more than sensory changes in imagination, emotion, attention or some other aspect of sensory experience (Briscoe 2015; Carruthers and Veillet 2011; Price 2009; Prinz 2012). Perhaps I can go some way towards assuaging that intuition by proposing an adjustment to both thought experiments.

Although it is plausible that both high-level perceptual states and cognitive states are *associated* with changes to sensory phenomenology, I think we can agree that such associations are only *contingent*. As such, we can adjust the thought experiments by stipulating that when you recognize the image as a duck, or when you understand the meaning of the utterance, you happen *not* to undergo any of the associated sensory changes (never mind why). For whatever reason, there are no changes to your imagination, to your emotional experience, to the distribution of your attention, to how you parse linguistic items or to any other aspect of your sensory experience. Since your twin's experiences are like yours only with respect to sensory properties, they would thus experience *no* phenomenal changes in either scenario. You, however, *do* experience phenomenal changes in each scenario. Specifically, you would come to experience the image as a duck then as a rabbit, and come to experience the utterance as having a particular meaning. Since I've adjusted the scenario to rule out describing these changes in sensory terms, the only path available is to regard them as *non-sensory* phenomenal changes.

I hope to have cast serious doubt on ZOM1. Since we are dealing in intuitions, my case against ZOM1 is not so much a demonstrative proof as a strategic intuition pump. If your intuition is that these partial zombies are conceivable, then I've done my job. If, on the other hand, your intuition is that they are inconceivable, then there may be little I can do to persuade you otherwise, and you remain free to advocate ZOM1. The possibility of such a dialectical stalemate is to be expected in any debate that relies so heavily on phenomenological reflection, so should not be considered a failing of my argument against ZOM1.

If ZOM1 is indeed false, then ZOM doesn't get off the ground. Without the premise that non-sensory properties appear zombifiable, it won't help the conservative to establish ZOM2: that being zombifiable is a necessary condition of being phenomenal. That said, ZOM2 is a plausible condition—far more plausible than the invertibility condition INV2. However, since I have

already done enough to cast doubt on ZOM I will postpone discussion of this until the next section.

Overall, then, the gap-based argument for conservatism fails. If formulated in terms of non-sensory properties failing to appear gappy, the argument is problematically ambiguous. If disambiguated in terms of invertibility, the conservative would be right to say that non-sensory properties do not appear invertible but wrong to say that this precludes them being phenomenal. If disambiguated in terms of zombifiability, the conservative might well be right to say that being zombifiable is a necessary condition of being phenomenal but would be wrong to say that non-sensory properties fail that test.

One final line of argument deserves to be considered on behalf of the conservative. Besides conceivability tests, the explanatory gap is also associated with the knowledge argument. Perhaps a good test of phenomenality is whether a given property lends itself to a Mary-like scenario. Bayne (2009) considers this option on behalf of the conservative and rightly notes that high-level perceptual properties do not generate Mary intuitions: if Mary is an expert on tomato-perception, does she really learn anything new on first perceiving an object as a tomato? Similar doubts apply if we try to create a Mary scenario for awareness of cognitive episodes (see Bayne unpublished manuscript., though Siewert 2011 takes a different view). However, besides excluding non-sensory phenomenal properties, this Mary test would also exclude a number of sensory phenomenal properties. Adopting this condition on phenomenality would thus ‘... commit one to a highly implausible form of über-conservatism according to which even primary qualities such as shape and motion are not phenomenally admissible’ (Bayne 2009: 402). Like the invertibility argument for conservatism, this condition is too demanding to be viable.

III. A GAP-BASED ARGUMENT FOR LIBERALISM

III.1. *The argument*

In the previous section, I explored the suggestion that being gappy is a necessary condition of being phenomenal that non-sensory properties do not satisfy. Having rebutted this line of argument, I will now consider the possibility that being suitably gappy is a *sufficient* condition of being phenomenal that non-sensory properties *do* satisfy. Of course, we found in the previous section that ‘gappiness’ is an ambiguous notion, so a case for liberalism along these lines would need to focus specifically on either invertibility or zombifiability. Since I have already concluded that non-sensory properties do not appear invertible, I will attempt to build a case for liberalism on zombifiability. Horgan suggests that ‘... the robust conceivability of certain kinds of zombie scenarios can

serve as a criterion for the existence of certain kinds of phenomenal character' (2011: 61). I mean to use this criterion to support the existence of non-sensory phenomenal properties. My argument for liberalism is as follows:

LIB₁) There are non-sensory properties that appear zombifiable.

LIB₂) A property is a phenomenal property iff it appears zombifiable.

LIB₃) Therefore, there are non-sensory phenomenal properties.

Since I have made my case for LIB₁ already, the task at hand is to motivate LIB₂. It's tempting to say that LIB₂ is analytically true. Your zombie twin is like you in every respect apart from lacking all and only the phenomenal properties you have. Consequently, if a property is shared by you and your zombie twin then it cannot be phenomenal. Similarly, if a property is possessed by you but not by your zombie twin it must be phenomenal. Therefore, being zombifiable is necessary and sufficient for being phenomenal. The problem with this line of argument is that it frames the zombie scenario in a way that assumes an uncontroversial extension of 'phenomenal'. As explained in Section II.III though, the point of the zombie condition is to provide us with an *independent* test for whether a given property is phenomenal.

The lesson here is that zombifiability must be treated as *symptomatic* of phenomenality rather than *constitutive* of it. If zombifiability is symptomatic of phenomenality, then we must acknowledge the logical possibility that this apparent property can come apart from phenomenality itself. Specifically, one can coherently claim that there are properties that resist zombification but which are phenomenal, or that there are properties that are zombifiable but non-phenomenal. I will try to cast doubt on each of these claims. Readers may notice that the inference to LIB₃ does not strictly require zombifiability to be necessary to phenomenality—a sufficiency claim would do the job. However, by showing that the conditional runs both ways I hope to highlight the intimacy of the connection between phenomenality and zombie scenarios.

III.II. *Phenomenal but not zombifiable?*

Are there any plausible cases of properties that intuitively qualify as phenomenal properties but which are *not* zombifiable? The classic examples of phenomenal qualities, such as redness and painfulness, are clearly zombifiable. The experiences of primary qualities that seemed to resist inversion do not resist zombification: I experience shapes, textures, motion and distance but my zombie twin does not.¹⁶ The secondary qualities that resisted inversion

¹⁶ For some of these properties, we might not be able to conceive of a partial zombie twin who lacks *only* these properties but who is otherwise like us phenomenally. For instance, if a zombie lacks an experience of the cube's shape, one might think that it must also lack an experience of the cube's colour. However, this need not count against those properties qualifying as zombifiable.

also don't present a problem here: I can conceive of a being like me in all physico-functional respects but who lacks my olfactory experience of the rose, or my gustatory experience of umami. If there are any counterexamples to this condition, I cannot find them.

One complication here is the possibility of mental states with phenomenal properties to which we lack cognitive access.¹⁷ The existence of such inaccessible phenomenal properties is forcefully argued for by Block (2007). It could be claimed (1) that such properties are plausibly phenomenal, and (2) that such properties do not lend themselves to zombie scenarios. In response, I would suggest that it is very difficult to hold both claims in tandem. The question is whether the inaccessible properties under consideration deserve to be regarded as phenomenal. It might be proposed that they are phenomenal because they resist physico-functional reduction, but if that's the case we ought to be able to conceive of physico-functional duplicates who don't instantiate those inaccessible qualities. In that case, claim '1' would be true but claim '2' false. Alternatively, it might be insisted that zombie scenarios involving inaccessible properties are impossible. But then it is unclear why we should regard them as *phenomenal* properties rather than as run-of-the-mill unconscious mental properties (it might be replied that they share the 'hidden essence' of phenomenality, but I will confront this suggestion in Section III.IV). In this case, claim '2' would be true but claim '1' hard to justify. Either way, these Blockian properties don't constitute a clear case of properties that are phenomenal but which do not lend themselves to zombie scenarios.

III.III. *Zombifiable but not phenomenal?*

Are there any plausible cases of properties that are zombifiable but which do not intuitively qualify as phenomenal? I cannot think of any serious candidates, but the conservative might insist that *non-sensory* properties are just such properties. They can concede that when we perceive an image as a duck or judge that ducks are cute we are aware of properties that appear zombifiable, but then deny that these properties qualify as phenomenal. By refusing to accept that zombifiability suffices for phenomenality, conservatives can block the gap-based argument for liberalism. This is the last serious line of defence for conservatives so I will attack it at length. I suggest that there are three intuitive features of phenomenality that we can reasonably expect an account of phenomenality to respect. By saying that non-sensory properties are zombifiable but not phenomenal, the conservative is left in a poor position

It is not a condition of being zombifiable that we can conceive of a duplicate lacking precisely the property in question and no others. A property can make a distinctive contribution to our phenomenology even if it depends in some way on the presence of certain other phenomenal properties.

¹⁷ Thanks to an anonymous referee for highlighting this.

to accommodate any of these features. By contrast, the liberal can straightforwardly accommodate all three of them. My argument here is not that failure to accommodate these intuitive features is automatically fatal to a view of phenomenality: it remains quite coherent to adopt a view of phenomenality that disregards these features. Rather, my argument is that we should prefer a view that can accommodate them over one that cannot.

1. *Phenomenality and conceivability*: Intuitively there is a close connection between phenomenality and the conceivability tests standardly used to elucidate the concept of phenomenality. Accounts of phenomenality can reasonably be expected to respect this intuitive connection. Liberals can satisfy this expectation straightforwardly by regarding zombifiability as the hallmark of phenomenality. However, by claiming that some properties are zombifiable but non-phenomenal, the conservative divorces phenomenality from the zombie conceivability test. Here the conservative might tie phenomenality to a different conceivability test—specifically, the inverted spectra test. As we have already seen though, this is not a viable test of phenomenality. The conservative is thus forced to deny that phenomenality has any close connection with either of the standard conceivability tests.
2. *Phenomenality and resistance to physicalism*: Intuitively, phenomenal properties are distinctively resistant to physical reduction. Perhaps this explanatory problem can be overcome, but the point remains that phenomenal properties resist physical explanation in a way that non-phenomenal properties do not. Liberals can respect this intuitive feature of phenomenal properties. They can hold that zombifiable properties present a distinctive challenge to reductive physicalism and that all and only phenomenal properties are zombifiable. You won't find non-phenomenal properties presenting the same challenge, nor will you find phenomenal properties that fail to present this challenge.

The conservative can maintain that phenomenal properties resist physical explanation. However, given that they must regard non-sensory properties as zombifiable but non-phenomenal, and given that all zombifiable properties inevitably resist physical explanation, the conservative is forced to say that we experience properties that appear resistant to physical explanation but which are not phenomenal properties. In other words, the conservative must say that in phenomenal consciousness we are aware of two kinds of property that resist physical explanation—sensory properties and non-sensory properties—and that only the former are phenomenal properties. This may already seem like an unpalatable commitment, but matters get worse when we ask what is *distinctive* about the explanatory challenge presented by phenomenal properties. The conservative cannot say that the problem distinctive to phenomenal properties is that they are *zombifiable* as they are committed to zombifiable *non*-phenomenal properties. Nor can

they say that the problem is *invertibility* since, as previously discussed, it is not true of all the properties countenanced as phenomenal by conservatives that they appear invertible. It is not at all clear that sensory phenomenal properties present a different kind of explanatory challenge to zombifiable non-sensory properties. Consequently, it seems that the conservative is forced to say that phenomenal properties do not present a distinctive challenge to physicalism at all.

3. *The phenomenal awareness relation:* I present this third consideration more tentatively. To many, it is intuitive that there is a relationship subjects have to their phenomenal properties that they do not have to any other properties. When we instantiate a phenomenal property we are aware of it in a way quite different from any non-phenomenal way of being aware of a property. In other words, there is a unique relation of *phenomenal awareness* that we stand in to all and only phenomenal properties. Liberals can accommodate this feature of phenomenality: there is a special relationship we stand in to all and only phenomenal properties and zombie intuitions track whether we stand in that relationship to a given property.

To accommodate this feature of phenomenal properties, conservatives would need to say that there *is* a special relation we stand in to all and only our phenomenal properties but that this relation is *not* tracked by zombie intuitions. This would mean that our awareness of sensory phenomenal properties is of a different kind to our awareness of any other property, including zombifiable non-sensory properties. The problem here is that conservatives cannot give a credible account of what this distinctive relation is. Recalling objection '1' above, the conservative cannot say that the phenomenal awareness relation can be tracked by an appropriate conceivability test. And recalling objection '2', the conservative cannot say that this relationship presents a distinctive explanatory challenge to reductive physicalism. But then what is left to say about the phenomenal awareness relation? It seems that the conservative cannot give a credible account of the difference between our awareness of sensory and our awareness of non-sensory properties.

Of course, the conservative is free to *reject* the idea that we have a distinctive relationship with our phenomenal properties. They can say that what's special about phenomenal consciousness are the properties *of which we are aware* and not *the way in which we are aware of them*. Such a response would perhaps be more defensible than those available to objections '1' and '2'. Nevertheless, it would be at odds with how many understand phenomenal consciousness. Furthermore, it would leave conservatives with the unenviable task of describing just what property zombifiability tracks if not the relation of phenomenal awareness.

The three objections above reveal that treating non-sensory properties as zombifiable but non-phenomenal brings with it a number of counterintuitive commitments. By contrast, if we treat zombifiability as a sufficient condition of phenomenality we can avoid any such commitments. The conservative is free to insist that these counterintuitive commitments are all tolerable, but this stance may be hard to sustain under pressure. Consider, for instance, what the conservative would say in response to a critic who denied that bodily sensations qualify as phenomenal properties. They would not be able to rebut the critic by noting that bodily sensations lend themselves to zombie scenarios, or by saying that they resist physical explanation in a way that only phenomenal properties do, or by saying that we stand in the same phenomenal awareness relation to bodily sensations as we do to other phenomenal properties. Without these lines of defence, it is not clear what the conservative *could* say to protect their claim that bodily sensations are phenomenal. Perhaps if the phenomenality of certain sensory properties were threatened, conservatives would be less comfortable with taking on the counterintuitive commitments entailed by their rejection of LIB2.

III.IV. *A hidden essence of phenomenality?*

There is one last line of argument that might be used to cast doubt on LIB2. It might be claimed that phenomenality is a Kripkean *hidden essence*. On this view, we use superficial properties of prototypical phenomenal states to designate the essence of those states. Phenomenal states are then all and only those states that share this underlying essence, which is presumably some neurological natural kind. This opens up the space needed to deny both directions of the conditional in LIB2. First, there might be states that have the hidden essence of phenomenality but do not have the superficial property of lending themselves to zombie scenarios. One might take Blockian inaccessible phenomenal states to be such states. Secondly, there can be states that have the superficial property of lending themselves to zombie scenarios but which do not have the hidden essence of phenomenality. The conservative can claim that the non-sensory states highlighted in this paper are just such states.

It is tempting to respond that phenomenality is not the kind of property that could credibly have a hidden essence. For most natural kinds we can distinguish their subjective appearance from their objective nature, but for phenomenal states it is not clear that such a distinction can be made. Although I am sympathetic to this response, it would be dialectically inappropriate to dismiss the hidden essence view too lightly. Instead, for the sake of argument I will grant that phenomenality has a hidden essence and argue that LIB2 is nevertheless defensible.

On the hidden essence view, it is *possible* for zombifiability to be dissociated from phenomenality. The question is whether we have good reason to

believe that this possibility is *actual*. After all, LIB2 is a claim about the actual world so any counterexamples to it must themselves be actual. Beginning with non-sensory states, why think that they do not share an underlying nature with phenomenal states? Two options are available here. First, one can directly characterize the neurological type identified with phenomenality, then show that non-sensory states are not of that neurological type. The problem here is that no uncontentious characterization of this neurological type is available, so the requisite comparison cannot be made.

This leaves the second option, which is to use the superficial properties of states as a defeasible guide to their underlying nature. Zombifiability presents itself as a salient superficial property here. Prototypical phenomenal states lend themselves to zombie scenarios because of their neurological nature so we can surmise that, in the absence of any evidence to the contrary, any zombifiable state will likely have the same neurological essence. If being zombifiable is used as a guide, we are thus led to the conclusion that non-sensory states have the hidden essence of phenomenality after all. One might prefer using other ‘gappy’ tests to establish the neurological essence of a state, such as the invertibility test or Mary test. As we have already seen though, these tests yield wildly implausible results. One might instead use tests that have nothing to do with gappiness, but then we would be owed an account of what these tests are and why they should be regarded as symptomatic of the hidden essence of phenomenality. It is far from clear that conservatives are in a position to discharge this dialectical duty.

Parallel considerations apply to the claim that Blockian states are phenomenal but not zombifiable. We are not a position to use neurological evidence to show that they have the hidden essence of phenomenality. We are in a position to use more superficial tests, but then it becomes doubtful that such tests would yield the result that Blockian states are actually phenomenal.

My argument here is that even if we grant the metaphysics of the hidden essence view, an epistemological problem remains. Zombifiability is a credible, if defeasible, test for assessing whether states have the hidden essence identified with phenomenality. Using this test, the putative counterexamples to LIB2 transpire not to be counterexamples at all. Of course, the conservative might propose other tests that might yield different results, but it is unclear what these tests would be and how the conservative could justify using them over the zombifiability test. Alternatively, the conservative might suggest that this defeasible test is in fact *defeated* because in the cases discussed it yields the implausible result that there are non-sensory phenomenal properties. This, however, would clearly beg the question against my proposal. Overall, the hidden essence view does not cast serious doubt on LIB2, so I am led to the

conclusion that the gap-based argument for liberalism is sound and that there exist non-sensory phenomenal properties.

IV. CONCLUDING REMARKS

Liberals and conservatives offer radically different views of the richness of our phenomenology. To resolve this dispute, we need a better understanding of what it takes for a property to qualify as phenomenal. In particular, we need to get to the bottom of how *being phenomenal* relates to *being gappy*—a task that is complicated by there being more than one way in which phenomenal properties might appear gappy. I have argued that there is no gap-based argument for conservatism: an argument based on invertibility fails to provide a plausible necessary condition of phenomenality and an argument based on zombifiability fails to provide a necessary condition that non-sensory properties fail to satisfy. More importantly, I have introduced a gap-based argument for liberalism: being zombifiable is plausibly a necessary and sufficient condition of being phenomenal, and there are non-sensory properties that lend themselves to zombie scenarios. I thus conclude that liberalism is true.¹⁸

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