

PHYSICALISM OR ANTI-PHYSICALISM: A DISJUNCTIVE ACCOUNT

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In this paper, we make a case for the *disjunctive view* of phenomenal consciousness: consciousness is essentially disjunctive in being *either* physical *or* non-physical in the sense that it has both physical and non-physical possible instances. We motivate this view by showing that it undermines two well-known conceivability arguments in philosophy of mind: *the zombie argument* for anti-physicalism, and *the anti-zombie argument* for physicalism. By appealing to the disjunctive view, we argue that two hitherto unquestioned premises of these arguments are false. Furthermore, making use of the resources of this view, we formulate distinct forms of both physicalism and anti-physicalism. On these formulations, it is easy to see how physicalists and anti-physicalists can accommodate the modal intuitions of their opponents regarding zombies and anti-zombies. We conclude that these formulations of physicalism and anti-physicalism are superior to their more traditional counterparts.

I. INTRODUCTION

Some of our mental states are such that there is something it is like to have them. There is something it is like to be in pain, there is something it is like to have a visual experience with a particular character, and perhaps there is something it is like to entertain some thoughts. Such mental states are typically characterised as *phenomenally conscious* mental states, and creatures that have mental states of this kind are said to be phenomenally conscious creatures (as long as they have such states, of course).¹

The philosophical debate about the nature of consciousness has been dominated by two broad camps. On the one hand, we have physicalists, who hold that consciousness is ultimately a physical phenomenon involving the instantiation of nothing other than physical and physically-realized properties, and that facts about consciousness supervene on purely physical facts. On the other, we have anti-physicalists, who argue that consciousness is fundamentally a non-physical phenomenon involving instantiations of irreducibly non-physical properties, and that facts about consciousness do not supervene on purely physical facts.^{2, 3}

¹ Henceforth, we will use “phenomenal consciousness” and (simply) “consciousness” interchangeably, as we are not interested in non-phenomenal kinds of consciousness, and our arguments will not (directly) apply to debates about other kinds of consciousness.

² For a physicalist account of consciousness, see, *inter alia*, Papineau (2002). For an anti-physicalist account, see, *inter alia*, Chalmers (1996).

³ Arguably, this physicalist/anti-physicalist dichotomy also covers *Russellian monism*, i.e. the view that both consciousness and the physical (*qua* dispositional/relational/structural) aspects of reality are grounded in instances of properties that belong to one fundamental kind. This is because Russellian monism has both physicalist (e.g. Stoljar 2001) and anti-physicalist versions (e.g. Goff 2017).

The deadlock between these two positions can be frustrating. So, it is fruitful to explore some alternative options. In so doing, we might find a way to either break or circumvent the stalemate. Here, we aim to explore one such alternative approach by considering an overlooked possibility: that consciousness is *essentially disjunctive*, in the sense that it has both physical and non-physical possible instances. More specifically, the view to be explored is that, in a non-trivial sense, any possible instance of consciousness is either physical or non-physical because consciousness can be construed as a disjunctive property with physical and non-physical properties as its disjuncts.⁴ On this approach, when a possible creature is phenomenally conscious, this is because it instantiates either some physical properties or some non-physical properties that fully ground its consciousness. Although the central tenet of this account---that the *actual* physicality (or non-physicality) of consciousness does not rule out the *possible* non-physicality (or physicality) of consciousness---is acknowledged by those who think that physicalism and anti-physicalism are at best *contingent* theses (i.e. many contributors to the debate⁵), here we propose the disjunctive view as a positive metaphysical account of consciousness and apply it to a range of issues in metaphysics of consciousness.

To motivate the disjunctive view, we go into some detail in showing how it undermines hitherto unchallenged premises in influential arguments for both physicalism and anti-physicalism. We then sketch how our proposal can be adopted by both physicalists and anti-physicalists, yielding two distinct ways of approaching the mind-body problem. We argue that the versions of physicalism and anti-physicalism that adopt the disjunctive view are superior to their more traditional counterparts. Notably, we don't here defend physicalism or anti-physicalism; rather, we want to show some ways how physicalists and anti-physicalists can advance their views in combatting their opponents' objections.

II. TWO CONCEIVABILITY ARGUMENTS

Let's begin by (re)introducing two well-known *conceivability* arguments, one for anti-physicalism, one for physicalism. These two arguments have the same basic structure. First, a conceivability premise, stating that some scenario is conceivable (for some appropriate sense of conceivability).⁶ Second, a linking premise, which states that if something is conceivable,

⁴ As we shall clarify below, there are other ways to cash out the view, as the view isn't necessarily committed to the reality of disjunctive properties. For example, it is compatible with consciousness being understood as a determinable property with physical and non-physical properties as its determinates, or even a quasi-eliminativist position whereby consciousness itself is not a real property, but physical consciousness and non-physical consciousness are real properties.

⁵ For example, a realizer-functionalist who thinks that in the actual world pains are physically realized, but there are possible worlds in which the pain-role is occupied by some non-physical property, is arguably committed to this view. Further examples of positions in metaphysics of consciousness where this possibility is not ruled out are discussed in what follows. We thank an anonymous reviewer for pointing this out.

⁶ Different conceivability arguments employ different conceptions of conceivability (e.g., primary vs. secondary, ideal vs. non-ideal, positive vs. negative) together with different forms of possibility (e.g., primary vs. secondary). A full-blown assessment of these arguments would require exploring each variant. See Chalmers (2002) for a thorough discussion. However, we will here keep the notion of

then it is metaphysically possible. Together, these premises are meant to thereby establish some modal truths regarding the relevant entities. Finally, there is a conditional premise, which aims to establish actual truths about these entities from these possibilities. The two arguments we shall discuss are *the zombie argument* and *the anti-zombie argument*.⁷

We understand a *zombie* to be a mere physical duplicate of a phenomenally conscious creature that nevertheless lacks phenomenal consciousness.⁸ So understood, the zombie argument for anti-physicalism can be expressed as follows:

- Z1. Zombies are conceivable.
- Z2. If something is conceivable, then it is metaphysically possible.
- Z3. If zombies are metaphysically possible, then phenomenal consciousness is a non-physical property.
- Z4. Therefore, phenomenal consciousness is a non-physical property.⁹

Meanwhile, we take an *anti-zombie* to be a mere physical duplicate of a phenomenally conscious creature which does *not* lack phenomenal consciousness. The anti-zombie argument for physicalism goes like this:

- AZ1. Anti-zombies are conceivable.
- AZ2. If something is conceivable, then it is metaphysically possible.
- AZ3. If anti-zombies are metaphysically possible, then phenomenal consciousness is a physical property.
- AZ4. Therefore, phenomenal consciousness is a physical property.

Both of these arguments have faced legions of objections, nearly all of which target the conceivability premises (i.e., Z1 and AZ1) and/or the linking premises (i.e., Z2 and AZ2).¹⁰ In what follows, we argue that, if consciousness is disjunctive in our intended sense, then these two arguments can be rejected *even if these controversial premises are granted*.

conceivability generic. This is primarily because such nuances are irrelevant to, and distract from, our central point.

⁷ For the zombie argument, see Chalmers (1996: 93-171; 2010: 141-206). For the anti-zombie argument, see Frankish (2007), who we follow in the argument's formulation, and more recently Piccinini (2017) and VandenHomergh (2020).

⁸ On the concept of a "mere" physical duplicate: there are two different readings of "mere", as we explain below. Here, we leave it vague enough to cover both meanings, as this superficiality is useful for initial presentation of the two arguments.

⁹ Sometimes this argument is formulated in terms worlds (and zombie-worlds), rather than individual's and their zombie twins. We discuss this version of the argument in §V.

¹⁰ For a rejection of Z2 (which also applies to AZ2), see Hill and McLaughlin (1999). For a recent argument against Z1, see Carruth (2016). For a dismissal of AZ1, see Chalmers (2010: 180).

Specifically, granting the controversial premises, we show that, given the disjunctive view, the two conditional premises---Z3 and AZ3---ought to be rejected.

Before continuing, a few clarifications are in order. First, we have formulated the relevant conclusions of the two arguments (Z4 and AZ4) in terms of consciousness being a physical property or a non-physical property. What do we mean by this? We understand the claim that phenomenal consciousness is a physical property as the claim that the property (or properties) in virtue of which a creature's mental states are phenomenally conscious is a physical property (or are physical properties). Similarly, we understand the claim that phenomenal consciousness is a non-physical property as the claim that some property (or properties) in virtue of which a creature's mental states are phenomenally conscious is a non-physical property (or are non-physical properties). This is compatible with two different readings, where the relevant property is either a property of the creature, or a property of some mental state(s) of that creature. Here, we will talk as if the former is the case, though this is entirely for presentation purposes.

Second, the question of what makes a property physical---or for that matter, non-physical---is notoriously difficult,¹¹ though we seem to have made some progress in addressing the mind-body problem without any unanimously accepted answer. With that in mind, we remain neutral about this matter, assuming we have a strong enough grasp on the distinction to make the following discussion clear.

Third, we assume a broadly realist view of properties. This is because the arguments we examine throughout the paper concern physical *duplication*, and it makes little sense to think of physical duplication without duplication of physical *properties*. Having said that, we shall try to remain neutral about what sort of entities properties are. As far as we can tell, the account to be presented is compatible with properties being universals or particulars (tropes).

Finally, a crucial clarification of the notion of a *mere* physical duplicate is required. There are (at least) two ways of cashing out this concept:

- (i) *The "minimal" conception:* A mere physical duplicate of *x* is a *minimal* physical duplicate of *x*.
- (ii) *The "bare" conception:* A mere physical duplicate of *x* is a *bare* physical duplicate of *x*.

To understand the difference between these two, a few words on the contrast between "minimal" and "bare" are in order. The notion of a minimal physical duplicate is heavily employed in the literature on global supervenience-based formulations of physicalism.¹² In discussions of global supervenience, a minimal physical duplicate of a *world* is understood as follows: a world *w** is a minimal physical duplicate of a world *w* just in case *w** is an exact physical duplicate of *w* and *it contains nothing else*. In other words, when minimally physically duplicating a world, we take all the physical entities and their physical properties in that world (whatever these may be), and we stop right there. Extending this idea to *objects*,

¹¹ See Crane & Mellor (1990), Wilson (2006), and Stoljar (2010) for related discussion.

¹² See Stoljar (2010) for a comprehensive discussion.

we take it that an object x is a *minimal physical duplicate* of an object y if and only if x has all physical properties of y and *has no further properties*.

In our treatment of the notion of a bare physical duplicate, we follow Frankish (2007), whose version of the anti-zombie argument we follow. Accordingly, an object x is a *bare physical duplicate* of an object y if and only if x is a physical duplicate of y and x has “no further properties of a *non-physical kind*” (ibid.: 653). This is a slightly different way to understand the idea of a mere duplicate, and as we shall argue, the relevant difference matters to the viability of the zombie and the anti-zombie arguments.

Notably, while all minimal physical duplicates of x are also bare physical duplicates of x , a bare physical duplicate of x may fail to be a minimal physical duplicate of x . To illustrate, suppose an object o has physical properties P_1 , P_2 and P_3 , and no other physical properties. A minimal physical duplicate of o , o^* , has P_1 , P_2 and P_3 , and no other properties whatsoever. So, if o has any non-physical properties, o^* will not have any of them. Nor will o^* have any *additional* physical properties. In this way, o^* is also a bare physical duplicate of o . But suppose a different object, o^+ , has exactly P_1 , P_2 , P_3 , and a further physical property, P_4 . While o^+ is not a minimal physical duplicate of o , it is a bare physical duplicate, as it has all of o 's physical properties, and *no further properties of a non-physical kind*. This difference between bare and minimal physical duplicates will play a crucial role in what follows.¹³

III. THE DISJUNCTIVE VIEW OF PHENOMENAL CONSCIOUSNESS

As mentioned, the disjunctive view says that phenomenal consciousness is essentially disjunctive, in having both physical and non-physical possible instances. This is because the view proposes construing consciousness itself as a property with physical and non-physical properties as its disjuncts. An immediate upshot is that any possible instance of consciousness is either a physical or a non-physical instance of consciousness. This disjunctive claim is meant to be understood in an *inclusive* sense, as we intend our account to allow for the possibility of cases where a creature's consciousness is fully grounded in physical properties *and* is also fully grounded in some property clusters that involve some non-physical properties.¹⁴

In more detail, we propose that the term “consciousness” (or the predicate “is conscious”) picks out a property/properties which is/are possessed in virtue of instantiating at least one of two kinds of properties: (1) properties of a physical kind, or (2) properties of a non-physical kind. That is, for any possible creature to be conscious, it must possess at least one of either *physical phenomenal consciousness* (henceforth PPC) or *non-physical phenomenal*

¹³ It is worth noting that the bare conception is a relatively unusual conception of mere physical duplication, but since Frankish's anti-zombie argument is formulated with this conception (see Frankish 2007: 653), it is worth exploring. As we proceed, we will explore the anti-zombie argument with the minimal conception of physical duplication as well as the bare conception.

¹⁴ We shall elaborate on this possibility shortly.

consciousness (henceforth NPC), and it is in virtue of possessing at least one of PPC or NPC that the creature is phenomenally conscious.¹⁵

We said that a conscious creature must have *at least* one of PPC or NPC. This “at least” qualification is important because our account allows for the possibility of overdetermination. Suppose that a creature is conscious in virtue of possessing PPC and also in virtue of possessing NPC. In this case, this creature’s consciousness is constitutively overdetermined: it is phenomenally conscious in virtue of having PPC and in virtue of having NPC. The possibility of such overdetermination cases will be important in our responses to the aforementioned conceivability arguments.

One might object to the possibility of such overdetermination: after all, in such alleged cases of constitutive overdetermination, neither PPC nor NPC seems *required* for our creature to be conscious, since, in the nearest worlds where it lacks one, it will still be conscious (because it still possesses the other property). So, the force of the “in virtue of” seems vitiated. In response, it should be noted that explanation need not be exclusive. There is generally no problem with something having two independent sufficient explanations. Zoe is a home-schooling parent in virtue of home-schooling her daughter; she is also a home-schooling parent in virtue of home-schooling her son. Each home-schooling relationship that Zoe bears to a child is a perfectly legitimate, full explanation of her being a home-schooling parent, and neither relationship seems to “exclude” the other as an explanation.¹⁶ So, there is no sense in which the “in virtue of” claim would be undercut if we grant the possibility of this kind of overdetermination.¹⁷

There are various ways to fill in the metaphysical details of the disjunctive view we are proposing. One way---which we will here use---is to take phenomenal consciousness itself to be a disjunctive property, comprised of a physical disjunct and a non-physical disjunct. This nicely captures the core claim of our proposal, namely that to be conscious is to have either a physical property or a non-physical property that constitutes one’s consciousness. Alternatively, if one is sceptical about the idea of disjunctive properties, one could take phenomenal consciousness to be a *multiply realizable* property and treat PPC and NPC as distinct ways of realizing consciousness. This can still allow us to say that consciousness is disjunctive in the sense that it is sometimes realized by physical properties and sometimes

¹⁵ Note that PPC and NPC may be clusters of properties (rather than single properties), in which case the cluster that corresponds to PPC will include only physical properties, while the cluster that corresponds to NPC must include some non-physical properties. However, for ease, we will treat them as if they are single properties.

¹⁶ Anyone who has attempted to home-school more than one child at a time may find this last claim hard to accept; it is nevertheless a possibility.

¹⁷ Worries about other cases of overdetermination, for example about *causal* overdetermination, have led to thorny issues in the physicalism/anti-physicalism debate (e.g. Kim 1998; see also footnote 28 below), but these issues are not directly relevant to the arguments of this paper. That said, in discussions of causal overdetermination, possible instances, and even the occasional actual instances are acknowledged. In any case, cases of causal overdetermination are importantly different from the cases of overdetermination the possibility of which we endorse.

realized by non-physical properties. Another option is to treat phenomenal consciousness as a *determinable* property, with PPC and NPC as distinct determinates.¹⁸ It should also be noted that under some conceptions of multiple realization and also some conceptions of the determinable/determinate property distinction, these different interpretations will be equivalent (see Yablo 1992; Shoemaker 2001; Clapp 2001; Wilson 2009). As far as we can see, nothing substantial hinges on these subtleties.

What is the motivation behind the disjunctive view? When we consider the debate over the zombie and the anti-zombie arguments, the disjunctive view appears to be a legitimate extension of these ideas. First, as noted above, the fact that physicalism and anti-physicalism are often defended as contingent theses makes the core claim of the disjunctive view a dialectically relevant option. Second, proponents of the zombie argument identify consciousness with NPC, proponents of the anti-zombie argument identify it with PPC; we acknowledge that both groups of philosophers are tracking something, and simply extend their claims to generate an interestingly consistent result. Third, and most importantly, our main motivation for this view is that, as we shall argue in §IV, it advances the debate over the nature of phenomenal consciousness by identifying common flaws in the aforementioned conceivability arguments.

One might ask: On the disjunctive view, is consciousness a physical or non-physical property? The short answer is that *it is complicated*. Regarding particular instances of consciousness, we can say that when a creature possesses consciousness in virtue of having PPC alone, then that *instance* of consciousness is physical. Similarly, if a creature possesses consciousness in virtue of having NPC alone, then that *instance* of consciousness is non-physical. But, in cases where a creature is phenomenally conscious because of possessing *both* NPC and PPC---a legitimate possibility, given the aforementioned possibility of overdetermination---then it would be wrong to say that this *instance* of consciousness is strictly physical or strictly non-physical.

Generalising this talk of consciousness of an individual to talk of consciousness at a *world*, if *all* conscious individuals in a given world w are conscious because they all possess PPC, then it is appropriate to say that consciousness is a physical property in w . In this sense, if physicalism is true in the actual world, it would be right to say that consciousness is physical in the actual world. Likewise, if *all* conscious individuals in world w^* are conscious because they all possess NPC (and no conscious creature possesses PPC), then consciousness is a non-physical property in w^* . But, if a world is “mixed”---i.e., some creatures are conscious because of possessing NPC and some because of PPC, and perhaps some possess both NPC and PPC---then consciousness is neither strictly physical nor strictly non-physical at that world. Though, in such a mixed world, individual *instances* of consciousness might be physical or non-physical.

¹⁸ One complication for this third option is that, on some accounts of the determinable properties, the possibility of constitutive overdetermination will be ruled out, as some argue that it is not possible to have two (or more) distinct determinates (between which there is no determinable-determinate relationship) of a determinable property simultaneously (see Funkhouser 2006). We are not committed to this claim.

The disjunctive view bears a subtle resemblance to what is known as the *conditional analysis* of phenomenal concepts (see Hawthorne 2001; Stalnaker 2002; Braddon-Mitchell 2003).¹⁹ According to the conditional analysis, “consciousness” has a two-fold conditional structure: *if* the actual world contains NPC, then “consciousness” refers rigidly to NPC; if the actual world is merely physical, then “consciousness” refers rigidly to PPC.²⁰ Further, it is *a priori* that phenomenal concepts have this conditional structure, and it is this same *a priori* that underlies the conceivability of zombies. It is after all an *a priori* possibility that the actual world contains NPC (even if it actually doesn’t), meaning that it is *a priori* possible, hence conceivable that there may be a zombie twin of an actually phenomenally conscious creature.

While superficially similar, our view is importantly different from the view that seems to motivate the proponents of the conditional analysis. First, while the conditional analysis suggests that phenomenal concepts refer to either physical properties *or otherwise* non-physical properties, we allow for the possibility of overdetermination cases. The possibility of such overdetermination is an important feature of our view, as we go on to show in the next section. But more importantly, the fact that this possibility is not permitted in the conditional analysis makes it vulnerable to an objection, originally due to Yetter-Chappell (2013), while that objection doesn’t extend to the disjunctive view. Yetter-Chappell’s objection is that the conditional analysis is not inclusive enough to account for all the *a priori* possible ways the world could have turned out. In particular, one such possibility is that the world contains NPC, but even if one were to lack NPC, one could still have phenomenal consciousness in virtue of having PPC (ibid.: 560-561). This is a possibility that the disjunctive view explicitly endorses.

Second, whereas advocates of the conditional analysis present their core claim as an *a priori* truth, in proposing the disjunctive view, we do not mean to do so. This last point is an especially important difference because a critic of the conditional analysis can question the *a priori* status of such conditionals (see Alter 2007). Regardless of whether such criticism is successful, the disjunctive view is not vulnerable to it.

Third, there is also an important dialectical difference between these two views. Specifically, the conditional analysis has been leveraged to show that physicalism can be defended despite the conceivability of zombies, suggesting that conceivability does not entail possibility.²¹ In

¹⁹ The conditional analysis is formulated in terms of phenomenal concepts, such as the concept of “pain” (rather than “consciousness” as a general term). To make the similarities and the differences between the conditional analysis and our view explicit, we will formulate the former as an analysis of “consciousness” and with reference to NPC and PPC, two properties/property clusters we have introduced above.

²⁰ In Braddon-Mitchell’s (2003) version, the second conditional is somewhat different from this. Rather, it is that *if* the actual world contains only physical properties (including PPC), then “consciousness” in the actual world refers to PPC, and in non-actual worlds, it refers to whatever physical property that plays the role that PPC plays in the actual world.

²¹ Exactly how broad this rejection of the conceivability-possibility link is depends upon how prevalent conditional concepts are: if they are rare, then the conditional analysis is compatible with accepting the link in many cases (see Majeed 2014: 241). But if they abound, then the link must be abandoned almost entirely.

contrast, those who adopt the disjunctive view can grant that conceivability entails possibility. This will be particularly crucial in §V, where we sketch versions of physicalism and anti-physicalism supported by the main tenets of the disjunctive view. These views, we argue, can accept that conceivability entails possibility. Further, the conditional analysis predates (and has not been applied to) the anti-zombie argument. Below, we will employ the disjunctive view against both the zombie and the anti-zombie arguments.

Finally, the views differ in what possibilities they are compatible with. Specifically, the conditional analysis is compatible with necessary versions of physicalism and non-physicalism. In contrast, the disjunctive view is not. This is because the disjunctive view entails that consciousness is possibly physical and possibly non-physical – that’s just what it means to accept that consciousness is *essentially* disjunctive.²²

The upshot is that the disjunctive view is a distinct and interesting way of conceiving of the nature of phenomenal consciousness. More importantly, the insights of this account can be put to a number of uses. The next section explores one such application: namely, generating a variety of problems for the zombie and the anti-zombie arguments for anti-physicalism and physicalism respectively.

IV. REFUTING THE ZOMBIE AND THE ANTI-ZOMBIE ARGUMENTS

In this section, we put our proposal to use by leveraging it to show how it undermines some key premises in the zombie argument and the anti-zombie argument.

Consider the anti-zombie argument first. Anti-zombies, as indicated earlier, are mere physical duplicates of creatures that also have phenomenal consciousness. But, as explained above, there are two ways to cash out the notion of a mere physical duplicate: as a bare physical duplicate or as a minimal physical duplicate. These different notions give us different conceptions of anti-zombies.

The first, and the one used by Frankish (2007: 653), defines anti-zombies as bare physical duplicates of conscious creatures. So understood, there is an important shortcoming of AZ3, the premise which infers that consciousness is a physical property from the possibility of anti-zombies.

Consider SCENARIO-1, in which we have two creatures, A and B. A is an actual phenomenally conscious creature, and B is A’s anti-zombie twin (where anti-zombies are understood under the bare conception of physical duplication). Further, let us stipulate that A’s consciousness is grounded in an instance of NPC alone. By definition, B has all of A’s physical properties, has no further properties of a non-physical kind, and is conscious. Given B cannot have any properties of a non-physical kind, B must lack NPC. But, importantly for our case against the anti-zombie argument, B can still be conscious by possessing PPC. And this is compatible with B being A’s bare physical duplicate. To see why, let I be the

²² Not that making the disjunctive nature essential also rules out “cheap” versions of the disjunctive view, which says e.g. all instances of consciousness are physical and so, by disjunction introduction, are either physical or non-physical. This “cheap” disjunctive view does not take consciousness as *essentially* disjunctive.

collection of all physical properties that A has. Any bare anti-zombie twin of A will have Γ , and will have no further properties of a non-physical kind, including NPC. But a bare physical duplicate anti-zombie twin of A could have *further physical properties*. So, B must be conscious in virtue of possessing the physical property PPC – a property that A lacks. Consequently, this is a possibility whereby a bare physical duplicate of an actual conscious creature is conscious, but it is not true that consciousness is a physical property: the property in virtue of which an inhabitant of the actual world is conscious is a *non-physical* property. Therefore, AZ3 is false, and the anti-zombie argument fails.

Alternatively, one could define anti-zombies as *minimal* physical duplicates of conscious creatures that are also conscious.²³ However, as we shall illustrate next, our proposal generates problems for the anti-zombie argument according to this construal too.

Now consider SCENARIO-2. Again, we have two creatures, A and B. As before, A is an actual phenomenally conscious creature, while B is A's anti-zombie twin (understood as a minimal physical duplicate). However, in this scenario, A's consciousness is overdetermined: A instantiates both NPC and PPC simultaneously. Because B is a minimal anti-zombie twin of A, B will lack NPC. However, B is still conscious in virtue of possessing PPC. Yet this is compatible with the possibility that consciousness is possessed in virtue of a non-physical property: *ex hypothesi*, one of the properties that fully ground A's consciousness is a non-physical property: NPC. Therefore, it is not true that if (minimal) anti-zombies are possible, then consciousness is a physical property. In other words, AZ3 is false under the minimal physical duplicate conception of anti-zombies too. Therefore, the anti-zombie argument fails under the minimal conception of physical duplication too.

There is another way of making the same point which does not rely on overdetermination. Consider SCENARIO-3 in which A only possesses PPC, and B is A's anti-zombie twin (understood as a minimal physical duplicate). However, there is also a third creature, C. C is an inhabitant of the actual world (like A), and is phenomenally conscious, but in virtue of NPC alone. So, in this scenario, the actual world is a mixed world, with some entities having physical instances of consciousness, and others having non-physical instances. Here, B's (possible) existence ensures that (minimal) anti-zombies are possible, as B is an anti-zombie twin of A. However, C's possessing NPC ensures that the claim that consciousness is a physical property is not true in the actual world. In other words, the possibility of anti-zombies does not rule out actual non-physical consciousness, undermining AZ3. Once again, the anti-zombie argument fails.

By using the proposed disjunctive account, one can also generate similar problems for the zombie argument. To reiterate, a zombie twin of a conscious creature is a mere physical duplicate of that creature which nevertheless lacks consciousness. Zombies could be understood as either minimal or bare duplicates. However, interestingly, the same counter-example scenario works regardless of which of the two is employed.

²³ In fact, using this notion instead of bare duplication might be independently motivated: since they are allowed to have additional physical properties of what they duplicate, bare physical duplicates are hardly proper physical duplicates.

Recall that Z3---our target premise in the zombie argument---says that, if zombies are possible, then consciousness is a non-physical property. Against this premise, consider SCENARIO-4. In this scenario, A is conscious in virtue of possessing NPC alone, and B is a minimal (and hence also a bare) physical duplicate of A. Consequently, B is a zombie duplicate of A: B has all and only A's physical properties, which do not include anything that fully grounds consciousness. However, from this, it does *not* follow that consciousness is a non-physical property, for the same reason that the minimal anti-zombie argument does not rule out non-physical consciousness: there may be some other actual creature, C, whose instance of consciousness is physical (i.e., C possesses PPC, but not NPC). Consequently, the possibility of a minimal (and hence also a bare) zombie twin of an actual entity A does not entail that, in the actual world, consciousness is a non-physical property. Therefore, the zombie argument fails also.

It is important to acknowledge what SCENARIO-4 can and cannot show. As we have just argued, it can show that the zombie argument, insofar as this argument is articulated in terms of premises Z1, Z2, Z3 and the conclusion Z4, is unsuccessful: Z3 is false, and Z4 is unwarranted. However, SCENARIO-4 cannot show---and doesn't even attempt to show---that physicalism can be defended against the zombie argument. After all, in SCENARIO-4, the actual world contains NPC, which is a non-physical property. Moreover, that this version of the zombie argument is unsuccessful doesn't mean that a different version of this argument couldn't possibly go through. In fact, the zombie argument is sometimes formulated in terms of zombie worlds.²⁴ On a world-based version of the zombie argument, it is conceivable (and therefore possible) that the actual world has a minimal physical duplicate that lacks consciousness, therefore facts about consciousness in the actual world do not supervene on the distribution of physical properties. Evidently, SCENARIO-4 is ineffective against the world-based version of the zombie argument. However, as we shall show below, the disjunctive view offers resources to tackle the world-based zombie argument effectively too. But to show this, we must introduce and define the concept of a *Bizarro twin*, which will be the focus of §V.

V. BIZARRO PHYSICALISM AND BIZARRO ANTI-PHYSICALISM

In the previous section, we showed how the disjunctive view undermines both the zombie and the anti-zombie arguments for anti-physicalism and physicalism respectively. This also constituted an indirect argument in favour of the disjunctive view of consciousness, showing that it deserves a place alongside the more traditional theories in metaphysics of consciousness. But showing that the two arguments in question are not successful is not the only interesting advantage of the disjunctive view. By appealing to the main tenets of this account, we can formulate versions of physicalism and anti-physicalism that are compatible with the idea that zombies and anti-zombies are *both conceivable and metaphysically possible*. The aim of this section is to sketch two such views.

The core idea here is that of a *Bizarro twin*. Bizarro twins are pairs of entities that are *nearly* physical duplicates, where the exception to exact duplication concerns the physicality or the non-physicality of the twin's consciousnesses. More precisely:

²⁴ We thank an anonymous reviewer for pushing us on this.

- (iii) *Bizarro twins*: x is a Bizarro twin of a phenomenally conscious creature y if and only if:
 - (a) if y has only physical and physically-realized properties, then
 - i. x possesses NPC; and
 - ii. x is otherwise a physical duplicate of y ;
 - (b) if y 's phenomenal consciousness is a non-physical property, then
 - i. x possesses PPC; and
 - ii. x is otherwise a physical duplicate of y .

Although this may look relatively complicated, the idea is in fact straightforward: whatever type of consciousness property one has, one's Bizarro twin has the other. So, if my consciousness is an instance of a physical property, my Bizarro twin's consciousness is an instance of a non-physical property; conversely, if my consciousness is an instance of a non-physical property, then my Bizarro twin's consciousness is an instance of a physical property. Other than this difference, Bizarro twins share all of their physical properties.²⁵ We have already encountered a pair of Bizarro twins: A and B in SCENARIO-1 above.

An initial objection to the idea of a Bizarro twin might go as follows. If A has PPC, then A's Bizarro twin must also have PPC, in which case the very conception of a Bizarro twin is incoherent. After all, if the physical properties of A are duplicated in A's Bizarro twin, the physical properties that realize PPC will be duplicated in A's Bizarro twin *too*, in which case these properties should bring about an instance of PPC. We think this objection is mistaken. When we say that A's Bizarro twin lacks PPC, we mean to say that it lacks the *cluster* of physical properties that "PPC" picks out, and these include the physical realizers of A's consciousness. By analogy, think about a green cereal bowl which has a nearly physical duplicate that is qualitatively identical with respect to all of its physical properties other than its greenness (e.g., because the near duplicate bowl is purple). When we are physically duplicating a green bowl with the exception of its greenness (to render a purple near-duplicate), we simply leave out the minimal cluster of properties that its greenness supervenes on (and we replace that cluster with the ones that deliver purpleness). Clearly, the conception of two cereal bowls that are exactly physically alike except for their colours is coherent; so the conception of Bizarro twins is coherent too.

Now, suppose that the disjunctive view is true, and, moreover, that the only consciousness-grounding property that is, was, and will ever be *actually* instantiated is PPC. In this case, NPC would be an *alien* property: a property instantiated in some non-actual world but not instantiated in the actual world. Intuitively, that there are alien non-physical properties ought to be compatible with physicalism. After all, physicalism is often taken to be a contingent

²⁵ What about the Bizarro twin of a creature whose consciousness is overdetermined (i.e., that possesses both NPC and PPC)? The above definition is compatible with a number of different options. However, the simplest approach is to say that the Bizarro twin of an overdetermined creature is itself overdetermined---that is, the Bizarro twin also possesses both NPC and PPC.

thesis. That NPC is an alien property fits nicely with the idea that physicalism may actually be true despite the merely possible instances of NPC.²⁶

This notion of a Bizarro twin gives physicalists a new way to accommodate their opponents' zombie intuitions, as the physicalist can offer an error theory along the following lines. When the anti-physicalist allegedly conceives of a zombie twin of an actual conscious creature *x*, what she is in fact conceiving of is *a zombie twin of a Bizarro twin of x*. Granting that conceivability entails metaphysical possibility, this means that zombies are both conceivable and metaphysically possible. But, importantly, this does not show that physicalism is *actually* false; it only shows that physicalism is *possibly* false.

Suppose that physicalism is actually true, and A, like all conscious creatures in the actual world, is conscious in virtue of possessing PPC. Suppose further that an actual anti-physicalist says that she can conceive of A's zombie twin, and from this, she infers that this zombie twin is metaphysically possible. Our would-be physicalist can say that the anti-physicalist is mistaken: strictly speaking, she cannot conceive of A's zombie twin (in any possibility-entailing sense), for there is no sense in which we can think of a physical duplicate of A that lacks PPC. But the anti-physicalist is not completely off base---there *is* a nearby zombie twin that can be conceived in a possibility-entailing sense. For in some non-actual world, A has a Bizarro twin, B, who is a near physical duplicate of A, while the only difference is that B has NPC instead of PPC. And it is easy to conceive of B's zombie twin, C, which physically duplicates B, but lacks NPC, and hence lacks consciousness. But C is not a zombie twin of A, because it lacks a physical property (PPC) that A possesses.

Bringing all this together, our physicalist can say that what the anti-physicalist is doing is mistaking conceiving of A's zombie twin, which is not a possible being, with B's zombie twin, which is a possible being. Further, this physicalist can grant that zombies are conceivable (provided one is careful about what exactly it is they are conceiving) and also metaphysically possible.

This variant of physicalism, which we call *Bizarro physicalism*, consists of the following commitments:

- (1) All actually instantiated non-disjunctive properties are physical (or physically-realized), including all actual instances of consciousness.
- (2) In some (merely) possible worlds, consciousness is instantiated in virtue of a non-physical property.
- (3) The conceivability of zombies entails the possibility of zombies.
- (4) Zombie twins of actual conscious creatures are neither conceivable nor metaphysically possible.
- (5) Zombie twins of Bizarro twins of actual conscious creatures are both conceivable and metaphysically possible.

As physicalists, Bizarro physicalists should also think that *all* actually instantiated non-disjunctive properties are physical (or physically-realized). This goes to show the

²⁶ See Lewis (1983: 364) for related discussion of alien properties and physicalism.

compatibility of Bizarro physicalism with a typical physicalist claim that any minimal physical duplicate of the actual *world* is a duplicate *simpliciter*.

Bizarro physicalism is a modest view in the sense that it claims that consciousness is only contingently physical. But it is a bold view in that it denies that zombie twins of *actual* conscious creatures are conceivable in a possibility-entailing sense. Moreover, it has a very desirable feature: it explains the temptation to think that zombies are both conceivable and metaphysically possible. After all, zombies *are* conceivable and metaphysically possible. But the zombies that are conceivable and metaphysically possible are not *our* zombie twins; rather, they are the zombie twins of our Bizarro twins. One might say that they are our zombie cousins.

At the end of §IV, we said that a pressing version of the zombie argument, i.e., the version that is formulated in terms of zombie worlds, needs still addressing. Having now introduced the concept of a Bizarro twin, we can finally tackle this argument---or at least show how the Bizarro physicalist can tackle it. To make the argument explicit, we ask you to consider a die-hard zombie fan who is unmoved by our case against the original zombie argument which appeals to Scenario-4, which concerns individual creatures. But zombie arguments can and often are run in terms of entire worlds rather than individual creatures. So, our die-hard zombie fan could argue that an entire zombie world – i.e., a world that features zombie twins of all actual conscious entities – is conceivable, and hence possible; this would get around our Scenario-4 argument, leaving the world-based zombie argument intact.

But note that, in response to the world-based zombie argument, a Bizarro physicalist can reply that the zombie world that is considered in this argument does not feature *our* zombie twins – rather, it concerns the zombie twins of our Bizarro twins. That is, the zombie world is metaphysically possible, and is also conceivable, though not in the manner that the zombie theorist originally hoped for. This is enough to undermine the argument, leaving the (Bizarro) physicalist able to maintain their distinctive brand of physicalism.²⁷

The notion of Bizarro twins also helps us formulate a novel version of anti-physicalism. Suppose that the disjunctive view is true, and moreover, as a matter of fact, the only consciousness-grounding property that is, was, and will ever be actually instantiated is NPC.

²⁷ One might think that if Bizarro physicalism is true, then the conditional analysis is true too, in which case Bizarro physicalism may be seen as a version of physicalism with the conditional analysis in the background; call this “conditional analysis physicalism” (as explained in §III). (Thanks to an anonymous reviewer for raising this possibility.) We want to resist this implication, as we have argued (in §III) that the conditional analysis and the disjunctive view are importantly different: they are compatible with different possibilities. And it is the disjunctive view, not the conditional analysis, that motivates the Bizarro physicalist reply to the zombie argument. In addition to this, we think that there is the following crucial difference between conditional analysis physicalism and Bizarro physicalism. On conditional analysis physicalism, “consciousness” *rigidly* refers to a physical property. However, it is not obvious if “consciousness” *rigidly* refers to PPC on Bizarro physicalism. It is difficult to assess how rigid reference works in the case of disjunctive kinds, but there is an argument to be made that if Bizarro physicalism is true, “consciousness” rigidly refers to either the disjunctive property *PPC* or *NPC*, or to both PPC and NPC. That said, even if we are wrong about this, and if Bizarro physicalism and conditional analysis physicalism are indeed indistinguishable, there is yet another novel use for the disjunctive view, which we go on to explain below.

Allowing for Bizarro twins gives the anti-physicalist an easy way to accommodate physicalists' talk of the conceivability (and hence possibility) of *anti-zombies*: if A is an actual conscious creature, then A's Bizarro twin B is also A's anti-zombie twin. That is because B will have (i) all of A's physical properties, (ii) lack NPC, but (iii) possess PPC. Of course, this argument assumes that we define anti-zombies as *bare* physical duplicates (i.e., they must have at least all the original creature's physical properties, but can have more physical properties too).

If we define anti-zombies in terms of minimal physical duplicates (so, they have all the original physical properties and nothing further), then we have to slightly complicate the story in a way that parallels the Bizarro physicalist account above. Specifically, let A be an actual creature that has NPC. Let B be A's Bizarro twin, and C be a minimal physical duplicate of B. C will not be a minimal physical duplicate of A, since C has PPC, which A lacks. This means that C is not an anti-zombie twin of A. So, paralleling the account above, the anti-physicalist can say that anti-zombie twins of actual non-physically conscious individuals are neither conceivable nor possible. However, the conceivability and possibility of C---i.e., an anti-zombie twin of a Bizarro twin---explains why a physicalist might mistakenly think they are.

The upshot is a position that mirrors Bizarro physicalism: consciousness is actually non-physical, anti-zombies are conceivable and therefore metaphysically possible, but anti-zombie twins of actual non-physically conscious creatures are not possible. What explains the mistaken thought that they are conceivable and possible is the fact that anti-zombie twins of Bizarro twins are both conceivable and possible.

Bizarro anti-physicalism is also a modest view in the sense that it claims that consciousness is only contingently non-physical. But it is a bold view, in that it denies that anti-zombie twins of actual phenomenally conscious creatures are conceivable in any possibility-entailing sense. Moreover, it has a very desirable feature: it explains the temptation to think that anti-zombies are both conceivable and possible; they are conceivable and possible after all. But the anti-zombies that are conceivable and possible are not *our* zombie twins; rather, they are the anti-zombie twins of our Bizarro twins---our anti-zombie cousins, if you will.²⁸

VI. CONCLUDING REMARKS

Based on the disjunctive view of phenomenal consciousness, we have shown that the logical space underlying the debate over the nature of phenomenal consciousness needs to be re-

²⁸ To what extent can this Bizarro move make anti-physicalism defensible *all things considered*? While in the case of physicalism, responding to the zombie argument makes physicalism eminently plausible (as explaining consciousness is often seen to be *the* problem of physicalism), the analogue for anti-physicalism and the anti-zombie argument does not seem to be the case. This is because it is traditionally assumed that the main problem facing physicalism is not the conceivability of anti-zombies; rather, it is the problem of mental causation (see, e.g., Bennett 2008). (We thank an anonymous reviewer for this observation.) While the topic of the problem of mental causation is beyond the scope of this paper, it is worth stating that this is a topic where the co-authors of this paper may have diverging opinions, as one of us thinks that there is no insuperable problem of mental causation for anti-physicalism (Baysan 2019; 2021) and the other is of two minds about it.

thought. Particularly, two conceivability arguments (one for physicalism, one for anti-physicalism) fail because their conditional premises linking the possibility of zombies or anti-zombies to the non-physical or physical nature of consciousness respectively turn out to be false. Moreover, by appealing to the disjunctive view, we have formulated distinctive versions of both physicalism and anti-physicalism: Bizarro physicalism and Bizarro anti-physicalism. The former is a physicalist theory which admits that zombies are both conceivable and metaphysically possible, but *our* zombie twins are neither conceivable nor metaphysically possible. The latter is an anti-physicalist theory which admits that anti-zombies are both conceivable and metaphysically possible, but *our* anti-zombie twins are neither conceivable nor metaphysically possible. Since they can accommodate the powerful zombie and anti-zombie intuitions of their opponents, both of these theories are superior to their traditional counterparts.²⁹

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