Mereology is not a Guide to (In)conceivability
A Reply to Giberman

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A sophisticated version of the zombie argument due to David Chalmers runs roughly as follows: a zombie world is ideally primarily conceivable, and whatever is ideally primarily conceivable is primarily possible. Thus, a zombie world is primarily possible, which implies, in turn, that either physicalism is false or Russellian monism is true. Appealing to some plausible mereological considerations, Daniel Giberman presents a novel argument to the effect that zombies are not ideally primarily conceivable. I shall argue, firstly, that a main premise of Giberman's argument is ill-supported, as it trades on a confusion between the primary and the secondary intensions of the "actually" operator. I then consider two lines of reasoning, which might be extracted from Giberman's text, in favour of another chief premise of his argument. I shall argue that the first line of reasoning is flawed, and the second one, in effect, will transform Giberman's argument into a kind of "parity argument" in which his mereological considerations play no role.

Perhaps the most famous objection to physicalism—the thesis that the mental supervenes on the physical—is the zombie argument. Roughly, the idea is that zombies, which are supposed to be complete physical duplicates of you and me that however lack phenomenal consciousness, are conceivable, and whatever is conceivable is possible. So, zombies are possible, which entails that physicalism is false. Yet there remains a controversy as to in which sense of "conceivability" zombies are conceivable, and whether being conceivable in that sense is a good guide to possibility.

Perhaps the most sophisticated version of the argument is due to David Chalmers (1996, 2009), and is heavily based on his two-dimensional semantic framework. The relevant notion of conceivability used in his argument is that

of *ideal primary conceivability*. A sentence *S* is said to be ideally primarily *negatively* conceivable if and only if it could not be ruled out a priori upon ideal reflection. Moreover, a sentence *S* is ideally primarily *positively* conceivable when an ideal thinker can imagine a coherent situation that verifies *S* (Chalmers 2009, 146). Based on these notions, Chalmers (2009, 147–148) presents his thesis regarding the relationship between conceivability and possibility:

> Conceivability – Possibility Thesis (CP). If a sentence is ideally primarily conceivable (whether negatively or positively) then it is primarily possible, that is, its primary intension is true in a metaphysically possible world. (See also Chalmers 2002a, 171–172)

According to Chalmers, the distinction between negative and positive conceivability does not matter for many purposes. His conceivability argument, accordingly, is in fact an argument scheme which can be understood as generating two different arguments, depending on which of these two notions is appealed to therein (we shall see the argument in a moment).

Now, let *P* stand for the complete physical description of the actual world in the language of complete microphysics. Let *Q* abbreviate an arbitrary positive truth about phenomenal consciousness. For example, *Q* could be the truth that some entity is phenomenally conscious, or that there are pains, etc. Chalmers's more recent version of the argument runs as follows (2009, 152):

(C1) $P \wedge \neg Q$ is ideally primarily conceivable.
(C2) If $P \wedge \neg Q$ is ideally primarily conceivable, then $P \wedge \neg Q$ is primarily possible, that is, its primary intension is true in a metaphysically possible world. (From (CP))
(C3) If $P \wedge \neg Q$ is primarily possible, then either $P \wedge \neg Q$ is secondarily possible (that is, its secondary intension is true in a metaphysically possible world) or Russellian monism is true.
(C4) If $P \wedge \neg Q$ is secondarily possible, then physicalism is false.
(C5) Physicalism is false or Russellian monism is true.

Although the conclusion of this argument is weaker than the falsity of physicalism, it is still an important achievement in that, as Chalmers puts it, Russellian monism has so much in common with property dualism that many physicalists would want to reject it (2009, 152). Clearly, if *Q* is the truth that

there is some conscious being, then $P \wedge \neg Q$ describes a zombie world, in which case the above argument is strictly speaking an argument from the conceivability of a zombie world.

In a recent article, Giberman (2015) proposes a novel objection to the first premise of the above argument. He concentrates on a version of the argument which employs the *positive* notion of ideal primary conceivability (unless otherwise specified, "conceivability" hereafter picks out ideal primary positive conceivability. Other similar phrases should be understood in this way as well). Moreover, he mainly focuses on that version of the argument which takes Q to be the truth that there is some conscious being, which turns the first premise into the claim that a zombie world is ideally primarily positively conceivable (hereafter (C1) should be understood in this way). Giberman takes the second premise and its basis, (CP), for granted. He then tries to show that (CP) and some mereological considerations jointly entail that zombies are not ideally primarily positively conceivable, and consequently that (C1) is false.[1]

In what follows, I first consider Giberman's argument for the inconceivability of zombies. I then argue that his argument suffers from a basic problem, as one of its main premises trades on a confusion between the primary and the secondary intensions of the "actually" operator. Turning to another main premise of his argument, I shall consider two lines of reasoning, which might be extracted from Giberman's text, in favour of that premise. I then argue that the first line of reasoning is flawed, and the second one, in effect, will transform Giberman's argument into a kind of "parity argument" in which his mereological considerations are entirely redundant. The upshot is that Giberman's mereological argument for the inconceivability of zombies cannot get off the ground.

1 Giberman's Argument Explained and Criticized

In constructing his argument, Giberman employs rather complex machinery. He begins by stating a plausible mereological constraint on actual bearers of phenomenal consciousness: "paradigmatic actually conscious objects are mereologically complex, and capable of losing some parts while retaining consciousness" (2015, 122). By "paradigmatic actually conscious objects" he means those mereologically complex conscious objects that are not unde-

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1 Throughout his paper, Giberman speaks of the "conceivability of zombies" and the like. Given that he is targeting Chalmers's argument, I take it that Giberman means the *conceivability of a zombie world*. Accordingly, I use these two phrases interchangeably.

tached proper parts of ordinary objects, such as human beings and other conscious animals. Moreover, "conscious" in his usage refers to the familiar intrinsic phenomenal property that you, I, and other conscious animals enjoy. It does not pick out, therefore, some proto-phenomenal property that would give rise to full-blown phenomenal experiences for complex objects under appropriate circumstances (Giberman 2015, 122–123).

As Giberman plausibly argues, I have many proper parts which are either conscious or would be if detached, such as *me-minus-an-arm*. Following Giberman, let us call the disjunctive property of being either conscious simpliciter or conscious-if-detached "consciousness-capability." He proceeds to introduce for any paradigmatic conscious object, x, a "mereological spectrum" from the conscious whole of x, at one pole, to its (presumably consciousness-incapable) most basic physical proper parts, at the other pole. Here is an example:

> Take my case as an example. At one pole of the spectrum (the 'whole pole') will be me and at the other (the 'simple pole') will be my most basic physical spatiotemporal-cum-mereological unit [...]. In between will be all my undetached proper parts. This is an expansive and varied lot. It includes the bearers of such descriptions as 'me-minus-a-quark', 'me-minus-a-neuron', 'me-minus-an-arm', 'a fusion of the easternmost half of my left ear and three cells in my right big toe' [...] and the like. (2015, 123–124)

Assuming that basic proper parts are never actually conscious, Giberman observes, it would follow that somewhere along x's mereological spectrum is a region containing *mereologically minimal consciousness-capable undetached proper parts*. These are the proper parts of x that satisfy the following two conditions:

(a1) If they were to become detached, they would be conscious.
(a2) If they then lost even a single basic part (without replacement by another one), they would be no longer conscious.

Moreover, there must also be a region containing some *mereologically maximal consciousness-incapable undetached proper parts*, that is, proper parts, y, which satisfy the following two conditions:

(b1)   If *y* were to become detached it would then need to gain as a part only one additional mereologically basic part (properly placed) in order to be conscious.

(b2)   No parts that satisfy the condition described in (b1) are more complex than *y*. (Giberman 2015, 124)

In the next step, Giberman introduces a notion which plays a crucial role in his argument:

> Call the segment on a given object's mereological spectrum that is bounded by these two points [that is, mereologically minimal consciousness-capable undetached proper parts and mereologically maximal consciousness-incapable undetached proper parts] its 'mereological threshold for consciousness' (MTC) since all the object's parts that lie beyond one end of the threshold are consciousness-capable and all the parts that lie beyond the other end are consciousness-incapable. (2015, 124)

So far Giberman has plausibly shown that the above-mentioned mereological constraint implies the existence of an MTC for any paradigmatic conscious object. The object's MTC divides its mereological spectrum into two factions: its consciousness-capable parts and its consciousness-incapable parts.

I am now in a position to present the gist of Giberman's argument for the inconceivability of zombies. The argument is based on a dilemma: for an arbitrary conscious creature, either its MTC is only contingently located on its mereological spectrum, or not. The first horn of the dilemma, Giberman argues, leads to the possibility of what he calls "physical panpsychism," which in turn entails the inconceivability of zombies. The second horn, on the other hand, renders zombies inconceivable. Either way, zombies turn out to be inconceivable. Before going through the full statement of this argument, it is important to see exactly what Giberman means by "physical panpsychism." We can formulate physical panpsychism, as introduced by Giberman, as a conjunction of three statements, the second of which is modified by the "actual" operator:

> PHYSICAL PANPSYCHISM (PAN). (i) Phenomenal consciousness is an intrinsic categorical property of mereologically basic particulars, and (ii) it is actually the case that (*T*) phenomenal consciousness plays a constitutive, underwriting role in the fundamental properties

of "final" physics, and (iii) phenomenal consciousness plays a constitutive, underwriting role in the exemplification of consciousness by more complex structures. (See Giberman 2015, 128) [2]

Let us now consider the argument in full detail (2015, 129–130):

> (1) If zombies are ideally primarily positively conceivable then physical panpsychism is not primarily possible. [I shall consider Giberman's defence of this premise below]
> (2.1) For arbitrary actually conscious physical structure x, either it is ideally primarily positively conceivable that x's MTC could have been different or it is not. (Tautology)

Suppose it is not. Then x's MTC is guaranteed to have an upper bound (which is less complex than x itself) in every conceivable state of affairs in which x exists. So, since every point on x's mereological spectrum beyond the MTC's upper bound contains consciousness-capable parts of x, it is inconceivable for x itself not to be conscious. Since x is an arbitrary actually conscious physical structure, it follows that zombies are inconceivable. For the sake of continuing the argument, then, the present supposition is to be rejected. So:

> (2.2) It is ideally primarily positively conceivable that x's MTC could have been different.
> (3) If it is ideally primarily positively conceivable that x's MTC could have been different then it is ideally primarily positively conceivable that physical panpsychism is true. [I shall consider Giberman's defence of this premise below]
> (4) If it is ideally primarily positively conceivable that physical panpsychism is true then physical panpsychism is primarily possible. (CP)
> (5) Physical panpsychism is primarily possible. ((2.2), (3), (4), modus ponens)

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2 Here is Giberman's own wording: "Physical panpsychism is the thesis that phenomenal consciousness is an intrinsic categorical property of mereologically basic particulars, which property plays a constitutive, underwriting role in (i) the fundamental properties of 'final' physics at the actual world and (ii) the exemplification of consciousness by more complex structures" (2015, 128).

So:

    (6) Zombies are not ideally primarily positively conceivable.
          ((1), (5), modus tollens)

The crucial premises of Giberman's argument are (1) and (3), which I shall examine in turn. Let us firstly consider how Giberman endeavours to back up (1). He begins with the following remark:

> [P]hysical panpsychism has actuality built in: it is a thesis about actual final physics. So even the primary possibility of physical panpsychism would entail that actual physics presupposes consciousness. (2015, 128)

Here, Giberman draws on the specific characterization he provided for physical panpsychism, which I previously formulated as (PAN). As we have seen, the second part of (PAN) has actuality built in: "(ii) it is actually the case that (*T*) phenomenal consciousness plays a constitutive, underwriting role in the fundamental properties of 'final' physics." He consequently maintains that "even the primary possibility of physical panpsychism would entail that actual physics presupposes consciousness." But why does Giberman think that the mere primary possibility of (PAN) should carry some implication about what is going on in the actual world? The *only* viable answer seems to be that he is appealing to a familiar fact about the semantics of the "actually" operator: for any sentence *S*, the possibility of "actually *S*" entails that *S* is true. Applying this semantic rule to (PAN), one might arrive, as Giberman seemingly does, at the following contention:

(G1) If (PAN) is primarily possible then (*T*) is true in the actual world.[3]

Giberman then continues:

> Consequently one cannot coherently conceive of a state of affairs that is physically indiscernible from the actual world—as required by the primary conceivability of zombies—unless either the physical structures in that state of affairs are conscious or

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3 (G1) is in fact a rephrasing of Giberman's quoted sentence "the primary possibility of physical panpsychism would entail that actual physics presupposes consciousness."

> physical panpsychism is assumed primarily impossible. (2015,
> 128)

For a better grip on what is going on here we can rephrase Giberman's idea in this passage as follows:

(*) For any ideally conceivable state of affairs A, if A is physically identical with the actual world then either the physical structures in A are conscious or else (Pan) is not primarily possible.

But how does Giberman move from (G1) to (*)? The requisite assumption for such a transition can be stated in the following way:

(G2) If (T) is true in the actual world then any ideally conceivable state of affairs which is physically identical with the actual world would be a state of affairs in which the physical structures are conscious.

Clearly, the conjunction of (G1) and (G2) implies (*).[4] The idea behind (G2), presumably, is that if we assume that (T) is actually true then (T) would be a part of the physical characterization of the actual world. Thus, any arbitrary primarily conceivable state of affairs which is physically identical to the actual world must be a state of affairs in which (T) is true. Given (T)'s content, however, it follows that the physical structures in that state of affairs must be conscious as well. Bearing all this in mind, we can formulate Giberman's argument for (1) in the following way, which I shall call Argument G.

Argument G.

(G1) If (Pan) is primarily possible, then (T) is true in the actual world.
(G2) If (T) is true in the actual world, then any ideally primarily conceivable state of affairs which is physically identical with the actual world would be a state of affairs in which the physical structures are conscious.
(G3) If any ideally primarily conceivable state of affairs which is physically identical with the actual world is a state of affairs in which the physical structures are conscious, then the zombie world is ideally primarily inconceivable.

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4 To see this, notice that the conjunction of $(P \rightarrow Q)$ and $(Q \rightarrow (\forall x\, Fx \rightarrow Gx))$ entails $(\forall x\, Fx \rightarrow (Gx \vee \sim P))$. Moreover, no proposition weaker than (G2) can, in conjunction with (G1), result in (*). Thus, although Giberman does not explicitly state (G2), it is fair to take him as relying on (G2) in his argument for (1).

(G4) If (PAN) is primarily possible, then the zombie world is ideally primarily inconceivable. ((G1), (G2) and (G3))

(G5) If the zombie world is ideally primarily conceivable, then (PAN) is not primarily possible. (Contraposition of (G4))

This, it seems, is how Giberman endeavours to substantiate (1). Unfortunately, (G1) is ill-motivated. As noted above, (G1) is based on the familiar rule about the "actually" operator: for any sentence *S*, the possibility of "actually *S*" entails that *S* is true. But this rule is valid only if the notion of possibility involved therein is that of *secondary* possibility, not *primary* possibility. Admittedly, the secondary possibility of "actually *S*" implies that the secondary intension of "actually *S*" is true in some (metaphysically) possible world, which leads, in turn, to *S*'s being true in the actual world. Now consider cases where primary possibility is involved. The primary possibility of "actually *S*" entails that the primary intension of "actually *S*" is true in some (metaphysically) possible world. But the primary intension of "actually *S*" is the same as the primary intension of *S* (generally speaking, the "actually" operator is redundant when the primary intension of the actualized sentences is appealed to). The reason is that (a) *S* and "actually *S*" are a priori equivalent, that is, the bi-conditional "*S* is true if and only if 'actually *S*' is true" is knowable a priori, and (b) a priori equivalent sentences have the same primary intensions (remember that primary intension is that aspect of meaning which captures a priori relations between sentences).[5] Thus, the mere fact that the primary intension of "actually *S*" is true in a possible world is not sufficient, by itself, to show that *S* is true in the actual world.

We may put the point rather differently. The secondary intension of the term "the actual world" in any possible world picks out the actual world; it has a constant secondary intension. But its primary intension in a given possible world picks out that possible world itself. Thus, the secondary possibility of

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5 See, for example, Chalmers (2006, 64). One way to see that a priori equivalent sentences have the same primary intensions is as follows. Suppose that an arbitrary sentence, *S*1, is a priori equivalent to *S*2. Take a possible world, *W*, in which the primary intension of *S*1 is true. According to the standard characterization of primary intensions, therefore, it is knowable a priori that if *D* then *S*1 is true, where *D* is a "canonical description" of *W* (for such a characterization, see, for example, Chalmers 2002b, 611). Thus, given the a priori equivalence of *S*1 and *S*2, it is knowable a priori that if *D* then *S*2 is true, which means that the primary intension of *S*2 is true in *W* as well. Likewise, every possible world in which the primary intension of *S*2 is true is also a possible world in which the primary intension of *S*1 is true. The upshot is that *S*1 and *S*2 have the same primary intension.

"*S* is true in the actual world" (or equivalently, "actually *S*"), not its primary possibility, entails that *S* is true in the actual world. I submit, consequently, that Giberman's support for (1) trades on a confusion between primary and secondary intensions of actualized sentences, and therefore does not get off the ground.

Let us now turn to the other main premise of the argument, (3):

(3) If it is ideally primarily positively conceivable that *x*'s MTC could have been different then it is ideally primarily positively conceivable that physical panpsychism is true.

Given Giberman's characterization of physical panpsychism, (3) can be rewritten as follows:

(3′) If it is conceivable that *x*'s MTC could have been different then it is conceivable that (i) phenomenal consciousness is an intrinsic categorical property of mereologically basic particulars, and (ii) it is actually the case that phenomenal consciousness plays a constitutive, underwriting role in the fundamental properties of "final" physics, and (iii) phenomenal consciousness plays a constitutive, underwriting role in the exemplification of consciousness by more complex structures.

It seems that Giberman tries, at least in one place, to support (3) by utilising the method of conditional proof: he first assumes the antecedent of (3), and then tries to show that given such an assumption, we have good reason to think that its consequent is also the case, that is, to think that it is conceivable that all three components of physical panpsychism are the case.[6] Regarding the first component, (i), he argues that there is no criteria other than imaginability and coherence upon ideal rational reflection for determining where *x*'s MTC could conceivably fall on its mereological spectrum (after all, we are working with ideal *primary* positive conceivability). On the other hand, the antecedent of (3) forces no specific commitment as to where *x*'s MTC could conceivably fall: it merely puts forward the assumption that *x*'s MTC could conceivably fall elsewhere than where it actually does. Thus, once it is assumed that *x*'s MTC could conceivably be different, "it follows that it is conceivable that

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6 This is in fact the method Giberman *seems* to employ in (2015, 130–131) to back up (3). As we will shortly see, he tersely alludes to a different motivation for (3) in a subsequent passage on page 138. At any rate, I shall examine both lines of reasoning for (3) which might be extracted from these passages.

the lower bound of an object's MTC could fall anywhere on its mereological spectrum, including the simple pole" (Giberman 2015, 130), which means that consciousness could conceivably be an intrinsic categorical property of mereologically basic particulars. In the next step, Giberman contends that once the conceivability of the first component of (PAN), (i), is granted (under the assumption that *x*'s MTC could conceivably be different), there remains no bar to the conceivability of the rest of (PAN): there is no obvious reason to deny that the conjunction of (i), (ii), and (iii) could conceivably be the case (under the same assumption) (2015, 131).

Giberman's reasoning here is far from convincing. Let us assume that the antecedent of (3′) is the case, that is, it is conceivable that *x*'s MTC could have been different. But it does not follow from this assumption alone that *x*'s MTC could conceivably fall *anywhere* on its mereological spectrum, including the simple pole. Perhaps, given that *x*'s MTC could conceivably be different, it would be only conceivable that *x*'s MTC was nearer to *x*'s whole pole, not to its simple pole. Or perhaps, given that assumption, although *x*'s MTC could conceivably be nearer to *x*'s simple pole, it is not conceivable that it could have fallen exactly at the simple pole. Giberman does not provide any reason to rule out such possibilities, and therefore the support he offers for (3) is insufficient.

Having said this, there is a passage in Giberman's paper where he succinctly hints at a different motivation for (3):

> The first part of the argument for premise (3) of argument (1)–(6) is that there is as good a conceivability argument for conscious mereologically basic physical items as there is for zombies. This is a problem for friends of zombies because conceivability arguments are the primary basis for zombie endorsement. […] So, while it is a problem for friends of zombies that their conceivability standards lead equally to physical panpsychism and zombies, it is not a problem for physical panpsychists. (2015, 138)

The idea is presumably that (3) might be supported by exploiting the very maneuver usually utilized by the anti-physicalists to show that zombies are conceivable. For example, Chalmers argues that "the zombie hypothesis is at least prima facie coherent and imaginable." Thus, to reject its (ideal) conceivability, he continues, "one needs to find something that undermines the prima facie coherence and imaginability, such as some sort of a priori incoherence, contradiction, or unimaginability in the hypothesis that emerges

on reflection" (2009, 154). In a similar manner, one might argue that since physical panpsychism is prima facie coherent and imaginable we are justified in believing that it is (ideally) conceivable, unless we find something that undermines its prime facie coherence and imaginability, which is supposedly not the case.[7]

It is noteworthy that if (3) is to be supported on a ground similar to that which is typically exploited to back up the conceivability of zombies, then Giberman's main argument should be regarded, not as a case *for* the inconceivability of zombies, but rather as a *parity argument* which seeks, at best, to neutralize the anti-physicalist argument for the conceivability of zombies. In other words, given such a support for (3), Giberman should be taken as aiming, in effect, to show that there must be a problem with the typical line of reasoning for the conceivability of zombies, as similar resources employed by that line of reasoning can be exploited to construct an (otherwise successful) argument, namely (1)–(6), for the inconceivability of zombies.

Moreover, if this is the real basis for (3), it would support not only (3), but also the following non-conditional stronger claim

(3″) It is ideally primarily conceivable that physical panpsychism is true

which would render some steps of Giberman's original argument redundant. This way we would arrive at the following, much simpler argument:

(1) If zombies are ideally primarily positively conceivable then physical panpsychism is not primarily possible.

(3″) It is ideally primarily positively conceivable that physical panpsychism is true.

(4) If it is ideally primarily positively conceivable that physical panpsychism is true then physical panpsychism is primarily possible. (CP)

(5) Physical panpsychism is primarily possible. ((3″), (4), modus ponens)

(6) Zombies are not ideally primarily positively conceivable. ((1), (5), modus tollens)

This argument, again, is to be understood as providing a parity argument against the typical line of reasoning for the conceivability of zombies. Notice, however, that no mereological consideration plays any role in this argument. One worry about the above argument, which I shall not peruse here, is that it

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7 I thank Daniel Giberman and an anonymous referee of the journal for calling to my attention the passage just quoted in the text.

might well be vulnerable to replies proposed by Chalmers to other analogous parity arguments put forward to neutralize his conceivability argument.[8] The main problem with the above argument, nonetheless, is that (1) is ill-motivated, as I have already defended.

2 Conclusion

I have argued that the main problem with Giberman's mereological argument for the inconceivability of zombies is that the support he provides for premise (1) of his argument is flawed, as it trades on a confusion between the primary and the secondary intensions of the "actually" operator. I have also examined two different lines of reasoning which might be extracted from Giberman's text in favour of premise (3) of his argument. It seems that the first line of reasoning is wanting, and the second one will transform Giberman's argument to a kind of parity argument, which makes no use of his mereological considerations, and which may suffer from (alleged) deficiencies of other parity arguments proposed against Chalmers's conceivability argument. I conclude, therefore, that Giberman's mereological argument for the inconceivability of zombies is too ambitious to have any chance of success.[*]

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8 For various versions of such parity arguments, see e.g. Marton (1998), Yablo (1999), Sturgeon (2000), Frankish (2007), Brown (2010), Balog (2012). For Chalmers's responses, see (2009, 178–180).

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