Draft Copy. Accepted for publication by *Synthese.*
Please quote from published version.

The Necessity of Conceivability

Sophie R. Allen (Keele University)

Javier Cumpa (Universidad Complutense de Madrid)

Abstract: In his conceivability argument, Chalmers assumes that all properties have their causal powers contingently and causal laws are also contingent. We argue this claim conflicts with how conceivability itself must work for the conceivability argument to be successful. If conceivability is to be an effective mechanism to determine possibility, it must work as a matter of necessity, since contingent conceivability renders conceivability fallible for an ideal reasoner and the fallible conceivability of zombies would not entail their possibility. But necessary conceivability must either be governed by necessitating causal processes or by a necessitating non-causal mechanism. We argue the latter option is untenable or mysterious; whereas, if Chalmers chooses the former and applies it only to conceivability, his solution is *ad hoc*, but if he accepts necessary causal powers or processes generally, the conceivability argument fails. We conclude that, as it stands, the Conceivability Argument does not establish that physicalism is false.

Keywords: Conceivability; Necessity; Causal Powers; Physicalism; Chalmers.

Draft Copy. Accepted for publication by *Synthese.*
Please quote from published version.

Introduction

David Chalmers's conceivability arguments launched a range of research programmes in reaction to his conclusion that the possibility of philosophical zombies renders physicalism false. In this paper, we challenge the conclusion of his conceivability argument on the basis that the strength of the conceivability required to reach that conclusion is incompatible with his account of properties and laws.

In particular, we take issue with the consistency of Chalmers's insistence that the modal strength of properties and laws is contingent and the hitherto unacknowledged requirement that the conceivability required for the conceivability argument must obtain necessarily. Contingent conceivability is ruled out since it would render the conceivability argument fallible and the fallible conceivability of zombies would not entail their possibility. But necessary conceivability must either be governed by necessitating causal processes or by a necessitating, non-causal mechanism. We argue that if Chalmers chooses the former option and applies it only to conceivability, then his solution is *ad hoc*, but if he accepts necessary causal powers or processes in general then the conceivability argument fails. Alternatively, if necessary conceivability is governed by a necessitating non-causal mechanism, the onus is on Chalmers to explain what that mechanism is. We conclude that, as it stands, the conceivability argument does not establish that physicalism is false.

In section 1, we examine Chalmers's conceivability argument in connection with the necessity or contingency of conceivability. Section 2 presents our main arguments for the necessity of conceivability framed in modal and psychological terms, and against the contingency of conceivability. Finally, section 4 presents several potential responses from Chalmers to our arguments.

Draft Copy. Accepted for publication by *Synthese.*
Please quote from published version.

1. Chalmers's Conceivability Argument

The conceivability argument has developed considerably since its first philosophical appearance.[1] Let P be all physical facts and Q an arbitrary phenomenal fact or facts. Let us call the proposition that P is true without Q (that is, the proposition that P & ¬Q) the *Zombie Hypothesis*. We will follow Chalmers (2010, Chapter 6) and articulate the conceivability argument as follows (further explanations of terms will follow):

(1) P & ¬ Q is conceivable (in the right type of way).

(2) CP: If P & ¬Q is conceivable, then P & ¬Q is primarily possible (1-possible).

(3) If P & ¬Q is 1-possible, then P & ¬Q is secondarily possible (2-possible) or Russellian monism is true.[2]

(4) If P & ¬Q is 2-possible, then materialism/physicalism is false.

So: Materialism/physicalism is false or Russellian Monism is true.

Our concern with conceivability affects the tenability of the first and second premises and so we will have little to say about the rest of the argument. Unlike some physicalists (whom Chalmers

1 Our focus here is on Chalmers's conceivability argument because it is the most well developed, with a very large number of philosophers relying on it and accepting its conclusion about consciousness, and it could be considered foundational in current philosophy of mind. Consider panpsychists, who accept the conclusion of the conceivability argument, and so do many others. As such, the tenability of Chalmers's conclusion is of crucial importance to a wide range of philosophical positions on physicalism and the mind.

2 The explicit introduction of Russellian Monism into the conceivability argument is made in order to exclude a range of ontological views from the conclusion that physicalism is false, views to which the argument would otherwise not apply. In such views, phenomenal properties are necessarily connected to or identical with physical ones and so the move from the primary possibility of the zombie hypothesis P & ¬Q to its secondary possibility does not hold. We will further consider this and some other ontological accounts of the world in which the conceivability does not apply in section 3.2.

(2010) calls 'Type A Materialists'), we do not want to deny the first premise (1) outright and say that zombies are inconceivable. Rather, we are interested in the *nature* of conceivability and the *modal strength* of conceivability required to support the move from conceivability to possibility in premise (2), sometimes called the Conceivability-Possibility Thesis (CP). We explore these two topics in detail in the next section. Chalmers has already refined his conception of conceivability in order to deal with obvious difficulties with this thesis and we will accept these amendments without argument. According to Chalmers (2010, 148), the 'right kind' of conceivability is *ideal primary* conceivability (either positive conceivability or negative conceivability): one must, on ideal rational reflection, either be able to conceive of P & ¬Q being true or else not be able to rule out its truth by a priori reasoning.[3] This constraint is intended to rule out cases which seem to illustrate the fallibility of conceivability as a guide to possibility due to the conceiving agent having incomplete knowledge or understanding of the propositions under consideration or the justification for them. For instance, were one to conceive of the truth of a mathematical statement such as the Riemann hypothesis and also conceive of the truth of its negation, this is simply a case of prima facie conceivability and not ideal conceivability, and the former has no import for the possibility of a proposition.

If we accept the plausibility of ideal primary conceivability (both positive and negative), the type of possibility conceivability entails via CP is not metaphysical possibility but 1- or primary possibility: if a proposition S is 1-possible, then there is a centred world in which it would be rational to believe S true were one in that world. Or, to put the point another way, there is a world which verifies the proposition S even if it does not also satisfy S. The existence of a world which *satisfies* a proposition is a case of that proposition's being 2- or secondarily possible, which is reached from conceivability via CP and a further inference in premise (3).

3 One might question the notion of *ideal rational conceivability* in either its positive or negative forms on the grounds that it could not be achieved by any actual agents. We will not consider this objection here.

2. The Nature and Modal Strength of Conceivability

There are three further issues about conceivability to explore. First, we need to know more about what conceivability is and what kind of processes are involved in an agent's conceiving that a proposition is the case. Second, we will consider what the modal strength of conceivability needs to be for the conceivability argument to work. Third, we will investigate the connection between these issues: how the modal strength requirement relates to the processes involved.

2.1. Conceiving as a Psychological Process

Despite his careful distinctions between types of conceivability, Chalmers has only a little to say about what conceivability is, or what is involved in a subject's ideally conceiving a proposition such as the Zombie Hypothesis.[4] 'Conceivability is', we are told 'to be understood as an epistemic notion, defined in epistemological (and perhaps psychological) terms' (2010, 143). Underlying an agent's conceiving a proposition is a psychological process involving the imagination but also incorporating epistemic norms and constraints (2002, 160). For instance, Chalmers describes the move from prima facie to ideal positive conceivability in the following way:

> '[prima facie positive conceivability occurs] when a subject can imagine a situation that the person takes to be coherent and also takes to be one in which *S* is the case. Furthermore, one can say that *S* is *ideally positively conceivable* when its prima facie positive conceivability cannot be defeated on ideal rational reflection.' (2010, 144)

4 For a survey of issues concerning conceivability in cognitive psychology, see Berto & Schoonen (2018).

From this, we might presume that the psychological process involved in conceiving is not dissimilar from others such as imagining, believing or rational reflection. Ideal negative conceivability may be a similar process but one which is (perhaps) less reliant on imagination, such that a proposition cannot be ruled out a priori after ideal rational reflection. Thus, the processes involved in rational reflection are also required for negative conceivability. The conceivability of a proposition comes about because it can be conceived of by an agent (whether or not it actually is).

It seems plausible to think that the psychological process of conceiving a proposition is brought about in a similar way to other psychological processes, but one might be concerned that our understanding of this process might be complicated if it involves consciousness. Here, we will briefly explain why this possibility does not overly complicate the discussion. First, ascertaining the ideal *negative* conceivability of a proposition does not seem to require the involvement of phenomenal properties and qualia since ideal negative conceivability simply requires that one is not able to rule out the proposition a priori after ideal rational reflection. Nevertheless, one might think that *positive* conceivability does involve consciousness in order for the conceiving subject to imagine the situation in which a particular proposition is verified. However, if, on one hand, this phenomenal aspect is causally inert (as Chalmers and many others take qualia to be[5]), it is unlikely to be required for judging conceivability and judgments of positive conceivability could occur without it.[6] On the other hand, if judging the positive conceivability of a proposition does require being in a specific conscious state as well as having specific physical properties and, as we will

5 See, for instance: Jackson 1982; Horgan 1987; Chalmers 1996; also Kirk 1979, Seager 1991 and Levine 2001 who reject arguments against materialism because of the epiphenomenalism about qualia they imply. Chalmers (1996, 150-4, 160) allows that there may be a way to understand causation and qualia which avoids epiphenomenalism, although he tends towards accepting and then mitigating it.

6 The unlikelihood in this case is associated with the fact that the phenomenal properties associated with conceivability would have to have their influence in a non-causal way, and also do so in a subtle enough way that zombies remained conceivable. A zombie – who does not have phenomenal properties – needs to be able to positively conceive of propositions in order to be physically or functionally indistinguishable from a conscious human subject. (See Balog 1999.) In any case, we consider the options were consciousness to be involved below.

argue below, conceivability must hold as a matter of necessity, then Chalmers is implicitly committed to a necessary connection between physical and phenomenal properties in order to support the first premise (1) of the conceivability argument, thereby fatally undermining its conclusion. Thus, it would be unwise for the supporter of the conceivability argument to regard phenomenal properties as playing a necessary role in judgments of positive conceivability and henceforth we will presume that it does not.

If conceiving does not itself involve consciousness, then (if one follows Chalmers 1995) conceiving is a form of information processing and is open to functional or physicalist explanation. Other physicalist accounts of conceiving may be available, but in all cases, there will be a mechanism which can be described in terms of physical properties and processes in virtue of which an agent conceives of a specific proposition. The way these properties or processes interact with each other in order to facilitate conceiving is most probably causal, or according to a process which is analogous to causation (such as supervenience, realisation or other non-causal determination relations)[7], but we will leave open the possibility that conceiving could be brought about by a non-causal mechanism of some kind and consider that option separately.

As far as Chalmers is concerned, all properties, and by extension other causal processes, operate contingently (2010, *passim*). A property or set of properties can bring about a particular effect in one world and not do so in others. However, accepting that others do not agree with him, he argues that the existence of Kripkean a posteriori necessities does not derail the conceivability argument (2010, 145 and 166-170) because they are not 'strong necessities' which fail to have

7 In this regard, when we say that conceivability has a causal mechanism what we mean is this: there is a set of physical properties whose interactions and other physical events brings about the process of conceiving of a certain proposition for an agent, where this 'bringing about' is to be initially understood in Chalmers's own causal terms, i.e. contingently. The details of the causal account are not important here however: what is important is that, according to the physicalist, there would be some such physical mechanism and so we leave it open to physicalists to substitute their favoured physicalist account of mental processing for our own.

negations that are 2-possible even when those negations are conceivable. We will evaluate these claims in more detail below.

2.2. The Necessity of Conceivability

When we consider conceivability, and whatever processes and states of affairs bring it about that an agent conceives of a proposition S, it becomes clear that S must be conceivable in all possible situations. In this connection, we will define the necessity and contingency of conceivability as follows. Conceivability is necessary, or also it holds as a matter of necessity, if the conceivability of S holds in *every* world. By contrast, conceivability is contingent or it holds as a matter of contingent fact if the conceivability of S holds in *some* world but not all worlds. Furthermore, as discussed in the previous section, the conceivability of a proposition is grounded in rational, psychological processes: a proposition is ideally conceivable if and only if it is ideally conceivable by a subject (in worlds in which such subjects exist). (In worlds in which there are no such subjects, we will take conceivability of S in that world to be based on the subjunctive claim that were such subjects to exist, they would conceive of S should they choose to do so.). In this subsection, we will explore what the modal strength of conceivability is, and, in the next, the implications which this has for the properties and processes which ground conceivability. To show why conceivability is necessary, it will be helpful to recall precise definitions of positive and negative ideal conceivability and the central theses of Chalmers's modal rationalism which justify the second premise (2) of the conceivability argument.

First, recall that there are two 'modes' of conceiving by a subject:

> ***Ideal Positive Conceivability***: S is positively conceivable 'when a subject can imagine a situation that the person takes to be coherent and also takes to be one in which *S* is the case' and this conceivability 'cannot be defeated on ideal rational reflection' (2010, 144).
>
> ***Ideal Negative Conceivability***: '*S* is ideally [negatively] conceivable when the hypothesis expressed by *S* cannot be ruled out a priori even on ideal rational reflection.' (2010, 143)

Furthermore:

> ***POSNEG***: Ideal Positive Conceivability entails Ideal Negative Conceivability (it seems that Chalmers is not committed to the converse claim (2010, 148) although he has presented arguments for it (2002)).

Given these definitions, for ideal positive conceivability and ideal negative conceivability to be necessary, S must be (positively or negatively, respectively) conceivable in all possible worlds. Second, we have three 'strengths' of modal rationalism (MR) (Chalmers 2002, 194):

> '**Weak Modal Rationalism**: (Ideal Primary) positive conceivability entails (primary) possibility.
>
> **Strong Modal Rationalism**: Negative conceivability entails possibility.
>
> **Pure Modal Rationalism**: Positive conceivability ≡ negative conceivability ≡ possibility.'

It is immediately clear that if Pure Modal Rationalism were true, then its truth would require the necessity of positive and negative conceivability in order that the biconditionals between

conceivability and possibility obtain: the failure of S to be conceivable (either positively or negatively) at some possible world would entail S's not being possible. In such a case, the argument of this section would be almost done, although we would still need to establish the necessity of possible propositions (that is, that any possible proposition S is possible in all worlds such that Axiom 5 holds in the modal system in question). We will consider this point towards the end of this section. However, Pure Modal Rationalism is a very strong thesis about the relationship between conceivability and possibility and although Chalmers (2002) outlines a proof of it and speaks in its favour, he is circumspect about whether his argument is successful (2002, 195). For our present purposes, therefore, it would be better not to rely upon the truth of Pure Modal Rationalism to establish that conceivability is necessary and instead to show that conceivability is necessary even if one accepts one of the weaker versions of modal rationalism. After all, as Chalmers notes, the conceivability argument 'as traditionally used' will work even if only Weak Modal Rationalism is true (2002, 195).

If Weak Modal Rationalism is true, then S need only be ideally positively conceivable for the conceivability argument to hold. Given the entailment between positive conceivability and negative conceivability enshrined in POSNEG, then S will also be negatively conceivable such that S cannot be ruled out by ideal rational reflection. Now, given that Weak Modal Realism is stated by a conditional rather than a biconditional, one might think that the failure of S to be positively conceivable is of no great import: positive conceivability is a sufficient but not a necessary condition for possibility, so one might think that the contingency of positive conceivability – that is, the existence of a world in which S is not ideally positively conceivable – does not cause a problem for the conceivability argument.[8] And the same would hold also for Strong Modal Rationalism.

8 Here, one should not get mixed up between the contingency of the conceivability of S and the contingency of S. There is no problem with ¬S being ideally conceivable and thereby possible in all the same situations in which S is conceivable (and that would be expected for a contingent S).

However, we will argue that such possible worlds would cause a problem for the conceivability argument.

The difficulty with contingent conceivability arises when we consider the nature of negative conceivability as characterised by Chalmers above, such that an ideally negatively conceivable proposition cannot be ruled out by ideal rational reflection. The 'cannot' here is ambiguous. Were 'cannot' to be read in terms of metaphysical modality, then once again it would be clear that a world in which S is not negatively conceivable (presupposing the existence of suitably intelligent subjects to do the conceiving) – that is, a world in which S *can* be ruled out by ideal rational reflection – would preclude S being negatively conceivable in *any* world. Moreover, if S is not negatively conceivable in any world, S is not positively conceivable in any world either. Therefore, the first premise (1) of the conceivability argument requires ideal positive conceivability and ideal negative conceivability to be necessary, that is to say, to hold in all possible worlds, in order for the premise (1) to be true and the argument sound.

However, reading the 'cannot' as being a claim about metaphysical modality as we have in the previous paragraph might not be what Chalmers intends; it would, after all, tie conceivability and possibility so closely together that it would make the connection trivial. Moreover, on discussing the sense in which positive conceivability involves modal imagination, and other modal elements such as coherence or verification, Chalmers states:

> '[I]mportantly, the modalities here are *cognitive* or *epistemic*, and presuppose no tie to the metaphysical. To imagine a world is simply to engage in a distinctive and familiar sort of mental act; and the notions of coherence and verification are wholly grounded in rational notions. So there is no danger of trivializing the link between positive conceivability and possibility.' (2002, 156, emphasis ours)

In light of this, we will consider whether it is coherent to treat negative conceivability as contingent when the 'cannot' in the definition above is given an epistemic reading. On this reading, the negative conceivability of a proposition S amounts to the view that the subject cannot rule S out a priori on ideal rational reflection; *not, now, as a matter of metaphysical fact, but in virtue of psychological or epistemic facts about the subject's reasoning abilities*. Conversely, if there is a world w in which S is not negatively conceivable, then S can be ruled out a priori by the subject and thus (on the assumption that classical logic holds) ¬S is established a priori. There are two questions to consider in order to clarify whether it is coherent to consider negative conceivability as being contingent in this way: First, what is involved in ideal rational reflection? And, second, can S be ideally negatively conceivable when there is a world w in which ¬S has been established a priori?

As to the first question, the nature of ideal rational reflection is difficult to characterise in a satisfactory way. Chalmers (2002, 148-149) follows Menzies (1998) in suggesting that it is reasoning conducted by an ideal reasoner who is 'free from all contingent cognitive limitations'; an account which he then supplements with the notion that the reasoning of the ideal reasoner is undefeatable by better reasoning; the justification provided by an ideal reasoner 'cannot be rationally defeated'.[9] Freed from contingent cognitive limitations, it seems plausible to think that all ideal reasoners will reason alike when it comes to both positive and negative conceivability. If ideal reasoner Alicia can positively conceive S, then so can ideal reasoner Bella, regardless of the differences in their circumstances, and so S is also negatively conceivably for them. Furthermore, were there to be a world in which ideal reasoner Carlos rules out S a priori (such that S is not negatively conceivable for him), then any ideal reasoner should do so. Once we have abstracted away from all contingent cognitive limitations, ideal reasoners should all reason alike and Carlos's

9 It is notable that another modal notion has crept into the account of conceivability here via the characterisation of ideal reasoning, and it is far from clear that Chalmers can explain this away in terms of its being an epistemic or cognitive modality as he attempted to do in the quote above without making the account of ideal reasoning vacuous. We will not pursue this matter here, however.

case conflicts with those of Alicia and Bella: it would be inconsistent for them all to count as ideal reasoners if they reach contradictory conclusions. S cannot be positively conceivable in some worlds and not negatively conceivable in others. (We have yet to establish the necessity of this conceivability, and it requires that the processes which bring it about do so as a matter of necessity; this claim will be defended in the next section.)

Regarding the second question, it is not only the nature of ideal reasoning which threatens the coherence of the contingency of conceivability; on a widely accepted conception of a priori reasoning, the contingency of negative conceivability leads to inconsistencies. On the one hand, Alicia in w_1 is unable to rule out S a priori on ideal rational reflection, which establishes the possibility of S; while in another world w_2, Carlos rules out S a priori and thereby, according to classical logic, establishes ¬S a priori. Does Carlos's a priori justification show that ¬S is necessary? If it does, then this conflicts with the conjunction of Alicia's reasoning that S is negatively conceivable and the conceivability-possibility thesis which implies that S is possible. Conceivability cannot be contingent if a priori reasoning (especially ideal a priori reasoning) is thought to yield necessary truths. This position is supported by Chalmers who observes that 'possibility entails negative conceivability (no primary possibility is ruled out a priori)' (2002, 195). The analysis of the interaction of negative conceivability with aprioricity entails that negative conceivability is necessary and, given POSNEG, conceivability in general is necessary too.

We will pause here in our exposition to consider three concerns which one might raise at this stage: (a) one might argue that, despite our arguments that conceivability is necessary, there are many examples of failures to conceive which serve as counterexamples to our conclusion; (b) one might wonder whether the contingency of conceivability could be rescued by accepting contingent a priori truths; and (c) one might argue that our arguments for the necessity of conceivability is

assuming a modal axiom to the effect that all possible propositions are necessarily possible. We will consider these objections in turn.

(a) Does the fact that many people do not accept the first premise (1) of the conceivability argument – that the zombie hypotheses is conceivable – provide a counterexample to our conclusion that conceivable propositions must be necessarily conceivable? For instance, S will not be conceivable in a world containing only Dan Dennett and other (what Chalmers calls) type-A materialists and so, one might argue, the conceivability of S is not necessary. To extend this objection, one might draw attention to the fact that there could be many situations in which a conceivable proposition is not actually conceived of by anyone, but that this does not count against its conceivability. However, this objection overlooks the distinctions between positive and negative conceivability and prima facie and ideal conceivability. First, the cases of thinkers who sincerely claim that they cannot conceive of the zombie hypothesis being true are cases in which they cannot positively conceive of the zombie hypothesis being true.[10] The negative inconceivability of zombies has not been established, in the sense that the proposition has not been ruled out a priori. In addition, although we wish Type-A materialists no disrespect, their status as ideal reasoners is in doubt (as too is ours). A failure to conceive of S can occur despite the necessity of the ideal conceivability of S in situations in which the conceiving is less than ideal or in which there is no conceiving taking place (perhaps because there are no ideal reasoners or because they are not engaged in conceiving). Neither case is a genuine counterexample to the necessity of ideal conceivability. The only genuine counterexamples would be those in which the subject fails to conceive of the proposition S even after ideal rational reflection. However, we have considered these cases already and found that they are not cases which show conceivability to be contingent

10 We are not interested here in whether these thinkers are correct to reason as they do about the zombie hypothesis; they are free to challenge Chalmers on the soundness of his argument. Rather, we are aiming to show that these cases are not genuine cases in which a proposition (in this case about zombies) is contingently ideally conceivable.

because they are either inconsistent with the possibility and thus the conceivability of S (as in the case of Carlos, above) or at odds with the characterisation of an ideal rational reflection.

(b) The second objection points out that our argument for the necessity of negative conceivability relies on the necessity of truths established a priori. Perhaps it is plausible for Carlos to establish ¬S a priori without this conflicting with Alicia's ideally conceiving S (and thus, her establishing that S is possible) because some truths are contingent a priori (Kripke 1980, 54-7). However, even if we allow that some truths are contingent a priori (which is not a position which Chalmers appears to want to take), the kinds of truths which are contingent a priori, such as 'I exist' or 'The metre stick is one metre long' (by virtue of their contingency) do not permit us to draw conclusions about their truth in other possible situations. On Chalmers's two-dimensional semantics (2006, 588), contingent a priori truths are those with a necessary primary intension and contingent secondary intension, so they are sentences which are epistemically necessary but metaphysically contingent. As such, a conceiving subject would understand that although the proposition can be established a priori from his epistemic situation, centred on his world, a change in this situation would make it the case that the proposition was no longer satisfied. The apriority of the proposition would not be 'conclusive', as Chalmers (2010 175-176) calls it in response to a similar objection due to Hawthorne (2002), and '[i]t is always conclusive apriority that is relevant to matters of conceivability'. Hence, if ideal reasoner Carlos conclusively establishes ¬S a priori, then the possibility of S is ruled out for ideal reasoners too.[11]

(c) The final objection concerns the fact that there is a suppressed premise in our arguments for the necessity of conceivability: that all possible propositions are necessarily possible

11 One might take issue with Chalmers's reliance on the notion of *conclusive* a priori reasoning here, but we will assume that (perhaps by definition) ideal rational reflection involves such reasoning (and that ideal reasoners can tell when their a priori reasoning is less than conclusive). As noted, there are difficulties associated with ideal rational reflection and ideal reasoners too but, since these problems would serve to strengthen objections to the conceivability argument rather than weaken them, it does Chalmers no injustice to ignore them here.

(that is, that Axiom 5 of S5 is true). Were one to reject this axiom, then our argument would fail since the conceivability of S in one world would not be contradicted by S's not being negatively conceivable in another; nor would the positive conceivability of S remain constant over all ideal reasoners. In such a case, S could be possible relative to some worlds and not possible relative to others and so the contingency of conceivability would not have the untoward consequences which we have argued for.[12] Although we accept that one can reject Axiom 5 and maintain a workable modal system – one in which our arguments do not apply – we are unconvinced that conceivability arguments would maintain their allure in such a system. After all, if conceivability only establishes that a proposition is possible relative to some worlds and it remains impossible relative to others, it is difficult to see what import that possibility could have, especially when the possibility is non-actualised. Why should physicalists worry that there is a range of worlds in which the zombie hypothesis is possible, when there is also a range of worlds in which it is not possible? Furthermore, we are not convinced that modal rationalism would fare well in such a system, since there does not seem to be a reason to expect the notion of an ideal reasoner to remain constant over all worlds, whether or not they are accessible to each other. We will not pursue these matters here however, and will simply note that our acceptance of Axiom 5 (and Chalmers's apparent acceptance of it) remains a largely unexamined assumption which we will set aside as a topic for future research.

2.3. From the Necessity of Conceivability to the Necessity of the Processes which ground Necessary Conceivability

One might argue here that we have shown that the conceivability of a proposition is necessary, but that this does not show that the properties and processes which bring about this conceivability in every world are themselves necessitating properties or processes such that they bring about their

12 Stephan Leuenberger (2015) has recently argued for this kind of modal system and that Chalmers should be committed to such a system.

effects in every situation in which they are instantiated (in the absence of interfering properties); that is, we have yet to bridge the gap between the necessity of the conceivability that S and the necessity of the processes which bring about the conceivability of S. It seems that what we have said so far is consistent with contingentism about properties such that a property or process could have a particular causal role in one situation and lack it in another as long as some other property or process facilitated the conceivability of S. First, we should note that this could not be the case *within* a world: If an ideal reasoner Alicia (and her environment) instantiates properties which allow her to ideally conceive of S in circumstances C1, then she will do so; and so will any other ideal reasoner, such as Bella, with the same properties in circumstances C2 similar to C1 (on condition that those properties are not defeated or interfered with by others instantiated in C2 which are not present in C1[13]). We can see this more plainly when we consider a special case: if the properties and processes which are the basis of Alicia's conceiving S did *not* necessitate conceiving S in that world, they could fail to bring about Alicia's conceiving S at another time which would undermine her status as an ideal reasoner. This is not to say that conceiving cannot be brought about by different psychological processes in different situations or in different ideal reasoners (and, in fact, to deny this would be highly implausible); conceivability, in common with other psychological processes, can be thought of as variably realisable. However, within a world, the properties and processes which determine that an ideal reasoner conceives that S must do so in any other case in which they are instantiated, unless an interfering factor is present. Thus, these properties or processes must operate with natural necessity.

One might think that the existence of entities which act with such natural necessity provides a clear case for the postulation of entities such as causal powers or properties which have

13 Chalmers's account has already ruled out the presence of such properties which affect reasoning directly (and thereby defeat it) in his account of ideal reasoning, but we must rule out other properties which might interfere with Bella's conceiving.

their causal roles necessarily. But one has to be careful not to beg the question against the contingentist account of properties at this point. Perhaps a set of properties X which underlie the ideal conceiving of S in w_1 fail to do so in w_2 (because the properties in X have different causal roles in w_2). That scenario would be acceptable were w_2 also to contain another set of properties (call it Y, say) which did ensure that ideal reasoners in w_2 conceived of S. Here, we are quickly led to consider w_3, where both X and Y lack the causal powers to be the basis of the conceivability of S; nevertheless, S is conceivable in w_3 and so there must be a set Z to do the job of ensuring ideal reasoners can conceive S. This reasoning can be continued for indefinitely many iterations. For any specific psychological basis B of the conceivability of S, there is a world which lacks B or in which the causal powers of the properties of B do not ensure the conceivability of S and so the contingentist is committed to two very implausible claims in order to uphold the necessity of conceivability: first, that there are infinitely many possible bases of the conceivability of S; second, that every possible world just happens to contain at least one of these bases (if it contains reasoners at all). While the former is merely odd (especially given the conception of an ideal reasoner), the latter seems ad hoc and to bring the contingentist into conflict with the principle of plenitude of possible worlds: why shouldn't there be a world containing ideal reasoners in which the conceivability of S does not hold? This seems to be primarily possible in Chalmers's terms, and thus (by the principle of plenitude), should be secondarily possible too. Thus, the contingentist has to put arbitrary constraints on the principle of plenitude to ensure the necessity of conceivability. Contingentism and modal rationalism conflict with each other: the modal rationalist needs to restrict the range of possible worlds in order to make modal rationalism true.

On the other hand, if one is a necessitarian about the causal powers of properties, this implausible scenario does not result. The necessity of conceivability is ensured since specific properties and processes – perhaps those associated with ideal reasoners – guarantee that a

proposition which is conceivable to an ideal reasoner in one world is also conceivable to ideal reasoners in others.[14] We will consider how one might account for the necessity of conceivability in terms of the properties or processes of each world in the next section.

3. Responses

3.1. Conceivability Alone is Necessary

Is it plausible for Chalmers to treat causal processes as being, in general, contingent, but to make an exception for whichever processes are involved in the conceivability of a proposition? If, as we suggested in 2.1, conceiving a proposition is brought about by similar causal processes to those which govern other psychological processes, then there is no obvious rationale for making an exception for conceiving a proposition being a process which happens as a matter of necessity while other psychological processes, such as imagination, belief formation, or evaluation of evidence are not. In the absence of further grounds for treating conceivability as a special case, this solution seems *ad hoc*.

3.2. All Causal Processes are Necessary

The complaint that the first proposed solution is *ad hoc* would be alleviated if all causal processes were regarded as being necessary rather than contingent. If this were so, the processes and

14 It is worth noting here that we are not claiming that one needs to explain the precise underlying causal mechanism for each specific conceivable proposition in order to legitimise it as conceivable. Rather, we are concerned that there needs to be some mechanism or other which makes it the case that the range of conceivable propositions can be conceived by ideal rational agents in their respective possible worlds. Furthermore, for the conceivability argument to affect physicalism – as it aims to do – these mechanisms will need to be physicalistically respectable ones in physically possible worlds. The precise mechanisms involved in each case will be subject to local variations, depending upon the world and species of conceiver, but the details are not important (although they may be of interest to psychology or neuroscience). What we have to say targets Chalmers' conceivability argument but does not lead to scepticism about the possibility of conceiving a wide range of propositions, nor to generalised scepticism about modal knowledge.

properties underlying a subject's conceiving the proposition that a situation is possible and subjecting that proposition to ideal rational reflection would be governed by causality of the same modal strength as all other causality in the universe. This would thereby ensure that the conceivability argument does not fail because of ideal conceivability being contingent, and would do so in a non-ad-hoc way. Such a characterisation of causation could be true either because causal relations are brought about by irreducibly modal entities such as dispositions or causal powers, or because the laws of nature are necessary. (Shoemaker 1980; Borghini and Williams 2008; Aranyosi 2010; Strawson 2008; Wilson 2013; Carruth 2016.)

However, several people have argued that if causal relations obtain as a matter of necessity, then the conceivability argument fails.[15] This general problem is acknowledged by Chalmers (2010, 166) who presents arguments against strong necessities in order to establish the conceivability argument, but his discussion does not take into account the variety of ontological views on offer in which causation turns out to be necessary. A detailed examination of this issue goes beyond the scope of this discussion, since different ontological accounts of necessary causation interact with the conceivability argument in different ways,[16] but we will present a brief survey. The most obvious difficulty is that if there are necessary a posteriori truths (as there would be about causation on all the views considered in this section), then their negations cannot be ruled out by a priori ideal rational reflection; but, despite this, these negations are not 2-possible because no world satisfies the negation of these necessities. Premise (3) of the conceivability argument would be false. The move from primary to secondary possibility in Premise (3) also fails if one accepts Russellian Monism or

15 On the question of the implications of powers theories on the conceivability argument, see Allen 2020, Aranyosi 2010, Carruth 2016; moreover, Chalmers himself considers that strong necessities, or necessary laws of nature, would undermine the conceivability were they to be plausible (2010, 167-70). Compare Cumpa's (2018, 170-171) discussion of the implications of necessary and contingent causal roles of properties on Chalmers's view of the strong emergence of consciousness.

16 As Allen 2020 notes, the way in which the conceivability argument would be blocked depends upon one's other commitments, including whether or not one is committed to actualism and whether one accepts an ontology of pure causal powers or powerful qualities.

an ontology of powerful qualities, since in both these cases there is a necessary connection between physical and phenomenal properties, or else they are identified. Although there may be a possible world in which P & ¬Q is verified, there is none where P & ¬Q is satisfied because the properties which satisfy P are either identical with, or necessarily connected to, those which satisfy Q. For instance, for powerful qualities theorists who support the identity thesis (Heil 2003, Heil 2012, Carruth 2016), each and every property is both powerful and qualitative, so a world in which P is satisfied and not Q would be a world in which the physical truthmakers of P lacked their intrinsic qualitative natures and that is impossible.[17] Carruth (2016) suggests that the considerations above, which led to the rejection of premise (3) because there is no world which satisfies P & ¬Q, could equally lead to one to think that the conceivability argument fails at an earlier stage because premise (1) is false as the zombie hypothesis is not conceivable. If one's ontology is such that it is impossible for the properties which make P true and those which make Q true to exist independently of each other, this fact might be available to an ideally rational conceiver who might then be able to rule out the zombie hypothesis by ideal rational reflection.

On other dispositionalist accounts of causality and modality which involve pure powers rather than powerful qualities, the conceivability argument also fails. First, in naturalistic accounts of powers and modality which subscribe to actualism, the argument fails at premise (2), such that conceivability does not imply even 1-possibility, because the range of possible worlds which naturalistic actualism permits is not broad enough for there to be a world which verifies P & ¬Q; P & ¬Q is not 1-possible. Allen (2020) extends these results to show that the conceivability argument fails at premise (2) or (3) in both Platonist accounts of powers and those which accept alien

17 Because of the explicit mention of Russellian Monism in the conceivability argument it is not accurate to say that the argument does not apply to it. However, it is treated as an exception to other physicalist views in that the argument does not show it to be false. The same will apply to powerful quality theories if these are considered to be versions of Russellian Monism.

properties. If one tries to ensure the necessity of conceivability by making all causation necessary, then one is committed to an ontology in which the conceivability argument fails.

Perhaps the rejection of this solution has been too quick. Chalmers argues that Kripkean a posteriori necessities do not provide a counterexample to the conceivability argument (2010, 166-170) and so perhaps the examples we have given of how an ontology which ensures necessary causality can block the conceivability argument at various points can be avoided. Let us suppose for the sake of argument that they can be. However, we still require conceivability to be necessary in order to make the argument work. In this scenario, what Chalmers's conceivability argument needs is for it to be possible for all the cases of a posteriori necessity which do not involve conceiving to admit a range of possibilities *as if they were contingent*, and yet for all cases of conceivability not to do so. That is, Chalmers argues, although a world in which *water is not H_2O* is 2-impossible, such a world is conceivable, therefore 1-possible (that is, there is a world or worlds which verify that 'Water is not H_2O'), and it is this non-H_2O world which we are thinking about (in some sense) when we worry about the possibility of water not being H_2O.[18] This explanation must be ruled out in the case of conceivability for the present response to our argument to work.

Our current presumption is that conceivability is (like all other causal interactions) necessary but, it seems that, just as it is possible to conceive that water is not H_2O, we can conceive of a scenario in which conceivability does not occur as a matter of necessity. For instance, once again, we can exemplify our concerns with the case of Alicia who ideally (negatively or positively) conceives S and Bella who shares all relevant properties with Alicia and does not. In this case, given that the properties which determine Alicia's conceiving S do so necessarily, we know that Bella's situation is not 2-possible, but that situation's being conceivable does (according to Chalmers) imply its 1-possibility. There is a world v which *verifies* Bella instantiating the same

18 In keeping with our presumption for the sake of the argument, we will ignore Allen's (2020) counterarguments to this account.

relevant properties as Alicia and yet not (negatively or positively) conceiving S in virtue of those properties. v is, of course, dissimilar to the worlds which Alicia and Bella are actually in. In accordance with what Chalmers says about other necessities, world v is what we are conceiving of when we worry about possible failures of conceivability like Bella's, but the possibility of worlds like v in which Bella fails to conceive due to instantiating different properties to Alicia, should be taken seriously as a case which undermines our confidence in the necessity of conceivability. We cannot treat conceiving any differently from other a posteriori necessities, that is, we cannot regard the case of conceivability as what Chalmers would call a strong necessity while simultaneously accepting his argument that other necessities are not strong, but this is what would be required in order for this response to our argument work.

We conclude, therefore, that regarding all causal properties or processes as acting necessarily does not help to sustain the conceivability argument.

3.3. Conceivability is a Non-Causal Phenomenon

So far, we have concentrated upon analysing conceivability as if conceiving is a causal process.[19] This makes sense given its similarity to other psychological processes which are also (presumably) causal. However, one might argue that the conceivability of a proposition at least partially involves non-causal mechanisms or phenomena, by which we also mean to exclude atemporal determination relations which are intended to be analogous to causation, such as supervenience (on some conceptions of it) and realisation.[20] What kind of a phenomenon could this be? It cannot be brought about solely by physical processes or properties, since the manner in which physical entities interact

19 We should note that we are not concerned with conceivability in general, but only with Chalmers's account in his argument. Thus, our claim in this connection is, as we will argue below, that if there is no causal mechanism underlying conceivability, Chalmers is demanding that physicalists accept and use a non-physicalist account of conceivability.

20 See, for instance, Kim 1993, Shapiro 2004, Walter 2010, Bennett 2011, Baysan 2015.

is either causal or analogous to causality, unless there is a form of physical interaction or determination which is thoroughly non-causal. But if the latter is the case, Chalmers owes us an explanation of what this physical determination is, since it is currently mysterious and appears to operate only in the case of conceiving.

Since physical solutions to the problem do not seem obvious, perhaps there is a non-physical way in which the necessity of conceivability could be assured. One could argue that there are non-physical processes or states of affairs which ensure that an ideally conceivable proposition is conceivable by agents in all worlds; perhaps what is needed is some immediate grasping or rational intuition which does not require causal mechanisms to operate. What we have in mind here could be something like Kurt Gödel's mathematical intuition (1961, see also Parsons 1995), or Jerry Katz's semantic intuition (1981, extended to mathematics in his 1995) but it would have to be non-causal or it would already be covered by the cases considered above, and if it were non-causal, it would most probably have to be non-physical too. (It would also not do for it to be grounded in physical causal processes or to require them for its operation.) Herein lies a problem for this solution which is more serious than the prima facie difficulty that we have virtually no idea about what such a non-causal phenomenon facilitating conceivability would be: if the phenomenon is non-physical then its existence begs the question in the conceivability argument. Recall that the conceivability argument is designed to undermine the truth of physicalism by claiming that even if physicalism is contingently true, the existence of zombies is still conceivable and thereby possible. But this argument will not work if premise (1) of the conceivability argument requires physicalism to be false in the first place. If the non-causal phenomenon grounding conceivability is a non-physical phenomenon, then the conceivability argument does not work. This leaves only one option open: that the process which determines ideal positive or negative conceivability is a non-causal physical phenomenon which makes the conceivability of propositions (which are in fact conceivable)

necessary. What is this phenomenon? We have run out of ideas; and in the absence of obvious candidates, the onus is on the supporter of the conceivability argument to provide an explanation of how the conceivability of propositions such as the zombie hypothesis comes about.

4. Conclusion

We have argued that ideal positive conceivability and ideal negative conceivability, required for the conceivability argument, need to hold as a matter of necessity – in all possible worlds, for example – for the argument to work. We have considered what kind of a psychological and epistemic process conceiving is and argued that it is *ad hoc* to stipulate that conceivability alone is necessary, but that the conceivability argument fails if one treats all causal processes as being necessary. Finally, we have explored whether conceiving could be wholly or partially grounded by a non-causal mechanism. In such a case, conceivability would have to be a physical phenomenon but this leaves us unsure what such a mechanism could be. We conclude that the supporters of the conceivability argument owe those who are still sceptical about it an account of what makes conceivability successful in a way which can maintain premises (1) and (2); without further explication of conceivability, the conceivability argument does not work.[21]

References

Allen, S. R. 2020. Powers and the Hard Problem of Consciousness: Conceivability, Possibility and Powers. Manuscript. University of Keele.

21 *Acknowledgements*: This publication has been made possible thanks to financial support provided by the Research Talent Attraction Program (Project ID: 2016-T1/HUM-1263) from Consejería de Ciencia, Universidades e Innovación de la Comunidad de Madrid. We would also like to thank two anonymous referees of *Synthese* for their constructive comments on an earlier version of this paper.

Aranyosi, I. 2010. Powers and the mind–body problem. *International Journal of Philosophical Studies* 18 (1): 57–72.

Baysan, U. 2015. Realization Relations in Metaphysics. *Minds and Machines* (3): 1–14.

Balog, K. 1999. Conceivability, Possibility, and the Mind-Body Problem. *The Philosophical Review* (108) 4: 497-528.

Bennett, K. 2011. Construction area (no hard hat required). *Philosophical Studies* 154: 79–104.

Berto, F. & Schoonen, T. 2018. Conceivability and possibility: some dilemmas for Humeans. *Synthese* 195: 2697–2715.

Borghini, A. and Williams, N E. 2008. A Dispositional Theory of Possibility. *Dialectica* 62: 21–41.

Carruth, A. 2016. Powerful qualities, zombies and inconceivability. *The Philosophical Quarterly, 66*: 25–46.

Chalmers, D J. 1995. Facing Up to the Problem of Consciousness. *Journal of Consciousness Studies,* 2 (3): 200-19.

Chalmers, D J. 1996. *The Conscious Mind: In Search of a Fundamental Theory*. Oxford: Oxford University Press.

Chalmers, D J. 2002. Does conceivability entail possibility? In T. Gendler & J. Hawthorne (eds), *Conceivability and Possibility* (Oxford University Press, 2002): 145-200.

Chalmers, D J. 2006. Two-dimensional semantics. In E. Lepore & B. Smith (eds.), *The Oxford Handbook to the Philosophy of Language*. Oxford University Press: 574-606.

Chalmers, D J. 2010. *The Character of Consciousness*. Oxford University Press.

Cumpa, J. 2018. Are properties particular, universal, or neither? *American Philosophical Quarterly*, 55(2), 165–174.

Gödel, K. 1961. The modern development of the foundations of mathematics in the light of philosophy. Transcription of German shorthand draft, with translation by Eckehart Kohler and

Hao Wang, revised by John Dawson, Charles Parsons, and William Craig, in *Kurt Gödel, Collected Works*, Volume III (Oxford University Press, 1995): 374-377.

Hawthorne, J. 2002. Deeply Contingent A Priori Knowledge. *Philosophy and Phenomenological Research* 65: 247-269.

Heil, J. 2003. *From an Ontological Point of View.* Oxford University Press.

Heil, J. 2012. *The Universe as We Find It*. Oxford University Press.

Horgan, T. 1987. Supervenient qualia. *Philosophical Review* 96: 491–520

Jackson, F. 1982. Epiphenomenal Qualia. *Philosophical Quarterly* 32: 127-136.

Katz, J J. 1981. *Language and Other Abstract Objects*. Rowman & Littlefield Publishers.

Katz, J J. 1995. What mathematical knowledge could be. *Mind* 104 (415): 491-520.

Kim, J. 1993. *Supervenience and Mind: Selected Philosophical Essays*. Cambridge University Press.

Kirk, R. 1979. From physical explicability to full-blooded materialism. *Philosophical Quarterly* 29: 229–37.

Kripke, S. 1980. *Naming and Necessity.* Blackwell.

Leuenberger, S. 2015. The Contingency of Contingency. *Journal of Philosophy* 112: 84-112.

Levine, J. 2001. *Purple Haze.* Oxford University Press.

Menzies, P. 1998. Possibility and conceivability: A response-dependent account of their connections. In Roberto Casati (ed.), *European Review of Philosophy, Volume 3: Response-Dependence*. Stanford: CSLI Publications: 255–277.

Parsons, C. 1995. Platonism and mathematical intuition in Kurt Gödel's thought. *Bulletin of Symbolic Logic* 1 (1): 44–74.

Seager, W. 1991. *Metaphysics of Consciousness.* Routledge.

Shapiro, L. 2004. *The Mind Incarnate*. MIT Press.

Shoemaker, S. 1980. Causality and properties. In Peter van Inwagen (ed.), *Time and Cause* (D. Reidel): 109–35.

Strawson, G. 2008. The identity of the categorical and the dispositional. *Analysis* (68): 271–282.

Walter, S. 2010. Taking Realization Seriously: No Cure for Epiphobia. *Philosophical Studies* 15: 207–226.

Wilson, A. 2013. Schaffer on laws of nature. *Philosophical Studies* 164 (3): 653-667.