

What's Wrong with Strong Necessities?

Philip Goff and David Papineau

1 The Significance of Strong Necessities

1.1 Conceivability and Possibility David Chalmers' challenge to physicalism has dominated the philosophy of mind for the last seventeen years. His 1995 paper 'Facing up to the Problem of Consciousness' and his 1996 book The Conscious Mind reinvigorated the debate between physicalists and dualists. But Chalmers' mature attack on physicalism appeared over a decade later in his extensive 2009 paper 'The Two-Dimensional Argument against Materialism', reprinted in this volume.

Chalmers' argument against a posteriori physicalism starts with the conceivable separation of mind and brain. It makes conceptual sense that a being that who shares all my physical properties should nevertheless have no conscious life. Zombies are conceivable.

Chalmers then aims to move from the conceivability of zombies to their metaphysical possibility. If this move is granted, it follows that physicalism is false. If it is metaphysically possible that a being share my physical properties but not my conscious properties, then my physical properties cannot metaphysically determine my conscious ones. But obviously the move from conceivability to possibility cannot be immediate. As Kripke's work made clear, a statement can be conceivably true and yet not possibly true: 'Water is not H₂O' is conceivably true and yet is true at no metaphysically possible world.

However, Chalmers claims that there is a further aspect to Kripke's work, which implies that any statement that is conceivably true, even if it is not possibly true, expresses a genuine possibility: 'Water is not H₂O' is true at no possible world, and yet that sentence expresses the genuine possibility in which the colourless, odourless stuff in oceans and lakes is not H₂O. Similarly, there is no possible world at which 'Hesperus is not Phosphorus' is true, and yet that sentence expresses the possible situation in which the star seen in the morning is different from the star seen in the evening. (The two-dimensional framework spells out the exact relationship between these sentences and the possibility allegedly expressed – we will explain the two-dimensional framework below.)

Chalmers advocates a general principle according to which every conceivably true sentence expresses a genuine possibility. He then goes on to show that the genuine possibility expressed by sentences about zombie worlds is sufficient to refute physicalism.

1.2 Strong Necessities But is it a general principle that every conceivably true sentence expresses a genuine possibility? Why should there not be some brutally a posteriori necessary truths—'strong necessities' whose falsity is conceivable yet where no genuine possibility corresponds to the conceived falsity? Take 'Cicero = Tully', for example. The falsity of this claim is clearly conceivable. Yet it is by no means obvious that this conceivability points to any genuine possibility. Why can't we simply frame the thought that Cicero . . . is-not . . . Tully, even though there is no way of construing this thought as other than a straight impossibility?

If brute necessities of this kind are to be ruled out, it must be because, for any a posteriori necessity, the terms involved have extra content in addition to their referent. 'Water' does not just refer to H₂O, but expresses the property of being the colourless, odourless liquid in oceans and lakes. 'Hesperus' does not just refer to Venus, but expresses the property of being the heavenly body visible in the evening. It is these extra contents that allow us to construct 'surrogate' possibilities of

dissociation alongside the necessities that water is H₂O and Hesperus is Phosphorous. (The extra contents correspond to Chalmers' 'primary intensions'—again we will explain all this in more detail below.)

But why, to press the question, should there always be such extra content? Why shouldn't some terms simply refer directly to their referent, and stop at that? Call a term or a concept 'radically opaque' if and only if it does not reveal any substantive information about its referent. If there are two distinct but co-referring radically opaque terms, then putting them together with an identity sign between them would give rise to a strong necessity. Perhaps 'Cicero is Tully' is like this: its falsity is conceivable—because there is not enough a priori accessible information about 'Cicero' and 'Tully' to know without empirical investigation whether or not they are identical—but there is also not enough extra content to produce a 'surrogate possibility' that Cicero is not Tully. It seems like Chalmers owes us an argument here as to why there couldn't be such strong necessities formed with radically opaque terms.

Chalmers sometimes presents his view as endorsed by Kripke in Naming and Necessity (Chalmers 1996 p. 149, 2010 p. 171). But there is very strong textual evidence that Kripke was perfectly open to the possibility of strong necessities involving radically opaque terms, and that his own anti-physicalist argument at the end of Naming and Necessity proceeds differently from Chalmers' (Papineau 2007). In any case, something more than an appeal to authority is needed for a principle that promises to refute mind-brain physicalism.

At this point, much of the literature degenerates into debates about cases. Defenders of strong necessities offer examples designed to show that, outside of the mind-body case, there are strong necessities involving radically opaque terms: plausible examples of radically opaque terms include proper names, demonstratives, and observational terms. Chalmers responds, in each case, by proposing extra content for the alleged radically opaque terms which could be used to form surrogate possibilities, for example, arguing that 'Cicero' is a priori associated with the property of being the individual causally connected in the right way with the term 'Cicero'.

But this debate about cases is inevitably inconclusive. For one thing, it is unclear, to say the least, what principles govern the attribution of such extra content to terms. And in any case there is no reason why this debate should decide the issue. Suppose it were agreed on all sides that there are no strong necessities outside the mind-brain context. Why shouldn't it still be open to a posteriori physicalists to hold that mind-brain necessities are an exception? Why shouldn't they argue that there is something special about the way we refer to phenomenal properties that yields, unusually, radically opaque concepts and so conceivabilities unaccompanied by any corresponding real possibility?

1.3 The Argument from Modal Monism As Chalmers himself recognizes, a convincing case against strong necessities needs some principled basis. He aims to provide this at the end of 'The Two-Dimensional Argument against Materialism', in the section on 'Modal Rationalism'. The thrust of the argument is that admitting strong necessities would prevent us from giving a unified account of both metaphysical and epistemic modality.

Chalmers' thought is this. We start with one simple space of logically possible worlds: all the worlds that are conceivable. Then for each statement we can define a 'primary intension' and a 'secondary intension'. Intensions for statements are functions from worlds to truth values. The primary intension is true at a world if the statement comes out true if that world is taken to be a way the world actually turns out to be: if we consider the world where the colourless, odourless stuff in oceans and lakes is XYZ as a way that actual world has turned out, then 'Water is H₂O' is false. The

secondary intension is true at a world if the statement comes out true if that world is considered as a way the world isn't but might have been (which involves bearing in mind the empirical facts about how the actual world is): if we consider the world where the colourless, odourless stuff in oceans and lakes is XYZ as a way things might have been (whilst bearing in mind that the actual colourless, odourless stuff in oceans and lakes is H₂O) 'Water is H₂O' remains true.¹

Chalmers hopes that this apparatus can allow us to explain both metaphysical and epistemic necessity in terms of the same space of possible worlds: a statement is epistemically necessary if and only if its primary intension is true at all worlds, and metaphysically necessary if and only if its secondary intension is true at all worlds. But note that this uniform explanation would be blocked if there were any strong necessities. If there is no possible world where 'Cicero ≠ Tully' is true, then we cannot explain its epistemic possibility in terms of the truth of its primary intension at that world.

Of course, we could still posit two different spaces of worlds—the 'scenarios' corresponding to what is conceivable, and the possible worlds corresponding to what is genuinely possible—and then trivially analyse epistemic necessity as truth at all 'scenarios', and metaphysical necessity as truth at all genuinely possible worlds. But Chalmers argues that this would lose the simplicity of the uniform explanation, since it requires the arbitrary postulation of a limited range of metaphysically possible worlds which is narrower than the familiar space of epistemically possible worlds. If we allow for strong necessities, we must be 'modal dualists' committed to two different spaces of worlds rather than 'modal monists'.

Opponents may respond that this loss of simplicity is only to be expected, given that metaphysical and epistemic modality are quite different. But Chalmers does not accept that there is a deep divide here. From his point of view, both kinds of modality are grounded in what is conceivable, with a little twist added by secondary intensions. As he puts it:

Epistemic possibility involves what conceivably might be the case, and subjunctive possibility involves what conceivably might have been the case. Both are ultimately grounded in what it is rationally coherent to suppose (2010 p. 187).

Neither of us is persuaded by the argument against modal dualism and strong necessities, but for different reasons. And so at this point the co-authored paper branches into two distinct pieces, each written by (more or less) one author.

Philip Goff, author of section 2, is happy to accept that there is indeed a close link between metaphysical modality and conceivability, but holds that this link need not rule out strong necessities.

David Papineau, author of section 3, doesn't think that metaphysical modality has anything to do with conceivability in the first place, and so denies the initial motivation for the argument against strong necessities.

2 Stress-Free Modal Dualism by Philip Goff

2.1 Transparent and Opaque Conceptions What Chalmers finds stressful about modal dualism is its supposed commitment to a primitive notion of metaphysical modality which cannot be analysed in terms of conceivability. But modal dualism need not have this troubling feature. I will now describe a kind of modal dualism, which I will call 'stress-free modal dualism', which does not involve a

¹ Chalmers takes worlds considered as actual to be 'centred worlds' (Chalmers 2010, pp. 546-7), but we will put this detail to one side for the sake of keeping things simple.

commitment to primitive metaphysical modality that can't be analysed in terms of conceivability. So even if Chalmers is right that we ought not to believe in primitive metaphysical modality, we can still be modal dualists.

At the heart of stress-free modal dualism is the distinction between transparent and opaque conceptions. The rough and ready definition of a transparent conception is as follows: you're having a transparent conception if and only if you know what you're conceiving of. More precisely we can say a transparent conception only involves concepts such that:

- (i) If the concept refers to a property, then it reveals what it is for an object to have that property (i.e. it is a priori for someone possessing the concept, in virtue of possessing the concept, what it is for an object to have that property).
- (ii) If the concept refers to an object, then it reveals all the essential properties of that object (i.e. for any essential property P of the object referred to O, it is a priori for someone possessing the concept, in virtue of possessing the concept, both what it is for an object to have P, and also that P is an essential property of O).
- (iii) For any two object-denoting concepts, X and Y, it is a priori whether or not X and Y co-refer.²

To conceive of a Euclidean sphere as such is to have a transparent conception: the concept *Euclidean sphere* reveals what it is for an object to be spherical in Euclidean geometry (for an object to be spherical in Euclidean geometry is for it to have all points on its surface equidistant from its centre). If I go on to think of a Euclidean sphere as *David's favourite shape* then my conception ceases to be transparent: the concept *David's favourite shape* does not reveal what it is for an object to have the quality it denotes.

The stress-free modal dualist believes in two modal spaces: a narrow space of metaphysically possible worlds, and a broader space of epistemically possible scenarios. But crucially the distinction between the two modal spaces is defined in epistemic terms. The scenarios are the worlds that can be conceived of tout court, whilst the metaphysically possible worlds are those which can be conceived of under a transparent conception. We might say that the scenarios are the 'merely' conceivable worlds, whilst the metaphysically possible worlds are the 'really' (as in 'real beer')³ conceivable worlds—that is, those worlds which remain conceivable when we know what we're conceiving of.

It is conceivable that water is not H₂O, but this conception does not correspond to a genuine possibility. According to the stress-free modal dualist, this is because when one conceives of water as *water* one is not having a transparent conception: the concept *water* does not reveal the essence

² It is not clear that we can have a transparent concept of a particular object, because it is not clear that we can give sense to the notion that there is something to be understood that constitutes *what it is for, say, particular electron x – as opposed to particular electron y – to exist* (even though electrons have essential properties, such properties do not serve to distinguish one particular electron from another). The notion of a transparent conception seems to make sense for concepts which denote properties and kinds, but not for concepts which denote particulars (unless something like Leibniz's view is true according to which a particular object has a real definition). However, we can distinguish amongst conceptions involving object-denoting concepts, between those which are transparent and those which involve opacity. Insofar as we have involved in our conception two object-denoting concepts, 'X' and 'Y', such that we don't know a priori whether or not 'X' and 'Y' co-refer, to that degree our conception involves opacity: there is something we don't know about the scenario we are conceiving of, i.e. we don't know whether or not X is identical to Y. This is why stipulation (iii) is required in the above definition of a transparent conception.

³ The point being that beer that's not 'real' is not fake, just not 'the genuine article.' Thanks to Daniel Hill for suggesting that there should be a little clarification here.

of its referent. If the same state of affairs is thought of under a transparent conception, i.e. thought of as H_2O is not H_2O ,⁴ it ceases to be conceivable.

It is conceivable that there be a million-sided object, and this conception does correspond to a genuine possibility. According to a stress-free modal dualist, this is because when one conceives a million-sided object—without characterising the object in any more detail—one is having a transparent conception: someone who possesses the concept *million-sided object* knows what it is for an object to have a million sides.⁵

For the stress-free modal dualist, metaphysical possibility just is conceivability under a transparent conception. Clearly this form of modal dualism doesn't involve a primitive notion of metaphysical modality: metaphysical possibility is just a more determinate form of conceivability.⁶

2.2 Modal Monism Versus Stress-Free Modal Dualism How do we decide whether Chalmers-style modal monism or stress-free modal dualism is true? Note that both of them avoid the stress of a commitment to primitive metaphysical modality. One might think we should still go for Chalmers-style modal monism for reasons of economy: we only have to believe in a single space of worlds. However, I don't think economy should be a concern here, as neither view ontologically commits to the fundamental existence of worlds or scenarios. Both Chalmers-style modal monism and stress-free modal dualism reduce possibility to conceivability: for there to be a world/scenario is for that world/scenario to be conceivable (according to stress-free modal dualism, for there to be a scenario is for that scenario to be merely conceivable, for there to be a metaphysically possible world is for that world to be really conceivable). The only concern is that we have an analysis that captures the space of what is conceivable.

Chalmers-style modal monism will be inadequate if there are radically opaque terms or concepts, or at least if there are distinct but co-referring radically opaque terms or concepts. As was explained in section 1, if 'Cicero' and 'Tully' are radically opaque terms—if neither expresses non-trivial properties of its referent—then we can put them together with an identity sign between them to form a strong necessity.

But the existence of radically opaque terms is not a problem for the stress-free modal dualist. The fact that *Cicero is not Tully* is conceivable but not possible is to be explained in terms of the opacity introduced into the conception by the concepts involved. Perhaps 'Cicero' and 'Tully' are radically opaque, i.e. do not reveal any substantive information about their referents. Perhaps 'Cicero' and 'Tully' are merely *mildly opaque*: each reveals a substantive accidental property of its referent—from which a 'surrogate' possibility can be constructed (see section 1.2)—but there is not enough a priori accessible information to know that the two terms co-refer. In the former case, 'Cicero is Tully' is a strong necessity, in the latter case it isn't. Either way, the stress-free modal dualist has no difficulty.⁷

⁴ Actually, it is not obvious that to conceive of water as H_2O is to have a transparent conception of water: it may be that our chemical concepts refer by description. In this case, we can imagine replacing the concept of water with a concept of H_2O that conceives of it in terms of its intrinsic nature.

⁵ I develop this framework in greater detail in Goff MS.

⁶ This reduction of possibility to conceivability would be straightforwardly circular if we rely on a modal conception of essence (as a transparent conception involves knowing the essence of an object). Hence the stress-free modal dualist must ascribe to a definitional, rather than a modal, understanding of essence (see Fine 1994 for this distinction).

⁷ For more on the difference between transparent, mildly opaque and radically opaque concepts, see Goff 2011 and Goff MS.

If we want to analyse metaphysical possibility in terms of conceivability, then whether we go for Chalmers-style modal monism or stress-free modal dualism will at least in part depend on whether or not there are radically opaque terms or concepts.

2.3 Back to the Impasse We are back then to the impasse, and the long sequence of suggested counterexamples. Chalmers' opponents propose strong necessities involving radically opaque terms or concepts, Chalmers proposes an alternative analysis according to which the apparently naughty terms or concepts are in fact associated with certain accidental features of their referents, and it is not clear where the onus lies. We can now see that Chalmers is wrong to think that worries about primitive metaphysical modality can put the onus on his opponents, because stress-free modal dualists can happily accept the existence of radically opaque terms without needing to commit to a primitive notion of metaphysical modality which can't be analysed in terms of conceivability.

In fact, in the absence of any other considerations, it would seem that the semantic theories of Chalmers' opponents which imply the existence of radically opaque terms and hence strong impossibilities have a significant advantage: they offer hope that the conceivability of zombies is consistent with the truth of physicalism. If 'Cicero' and 'Tully' are both radically opaque terms, then 'Cicero is Tully' is conceivably false even though there is no genuine possibility corresponding to its falsity. Similarly, if 'pain' and 'c-fibre firing' are radically opaque terms which co-refer, then 'Pain is c-fibre firing' is conceivably false even though there is no genuine possibility corresponding to its falsity. It seems, therefore, that Chalmers had better find another way of putting the onus on his opponents.

Alternatively, if the stress-free modal dualist can demonstrate that we have a transparent conception of both pain and c-fibres firing, then she can infer from the conceivability of their separation, to the genuine possibility of their separation (given that for the stress-free modal dualist, metaphysical possibility just is conceivability under a transparent conception). This is the strategy for attacking physicalism that I myself favour (Goff 2011/MS).⁸

3 Modality is Nothing to do with Conceivability by David Papineau

3.1 Genuinely Metaphysical Modality I shall defend strong necessities by arguing that metaphysical modality has nothing to do with conceivability. My positive view is that metaphysical modality is grounded in counterfactual thinking⁹, and that counterfactual thinking is primarily geared to reflect the causal structure of the world. From this perspective, metaphysical modality charts the limits of alternative histories of the world, in the sense of how things could have gone differently from a causal point of view. If this is right, then it is unsurprising that the metaphysical possibilities should diverge from the epistemic ones. There is no reason why what we can conceive should be much of a guide to the space of causal alternatives.

To take this line is not simply to posit some 'primitive' notion of modality separate from conceivability. On the contrary, this line promises a definite explanation for the divergence between modal possibility and conceivability, in terms of the link between metaphysical modality and counterfactual and causal reasoning.

⁸ I would like to thank David Papineau, Sam Coleman, Paul Coates, Barry Dainton, Mary Leng, Daniel Hill, Stephen McLeod, and all the participants in talks I gave on this topic at the University of Hertfordshire and the University of Liverpool. I started this paper as a Post Doctoral Research Fellow on the AHRC project 'Phenomenal Qualities' at the University of Hertfordshire, and I am very grateful for the opportunity this position afforded me to develop my research.

⁹Cf Williamson, 2007, ch 5.

Right at the end of 'The Two-Dimensional Argument against Physicalism', Chalmers expresses doubts about the prospects for non-conceivability explanations of modality, and in particular about whether they can avoid collapsing metaphysical possibility into natural possibility. In my view, this pessimism is misplaced. However, there is no question of demonstrating this by producing a full-fledged positive non-conceivability account of metaphysical modality in the space available here. Still, perhaps I can do something to motivate such an account, by showing that there are some obvious features of metaphysical modality that resist explanation in terms of conceivability.

3.2 Father and Birthplaces For Chalmers, we get metaphysical modality when we consider worlds counterfactually (what 'conceivably might have been the case') and epistemic modality when we consider worlds as actual (what 'conceivably might be the case'). He sees these simply as two different dimensions to conceivability, which is why he holds that the same space of worlds is involved and strong necessities therefore ruled out.

However, in the present context we can scarcely take 'worlds' and 'ways of considering them' as given. Chalmers is supposed to be giving us an argument that the same 'worlds' are involved in both 'ways of considering' them, an argument which presumably hinges on the idea that 'counterfactual way of considering worlds' reflect independently given facts of conceivability just as much as 'considering worlds as actual'.

But it is not at all clear, to say the least, how the counterfactual way of considering worlds is supposed to be grounded in facts of conceivability. For example, consider the claim that 'David Papineau's father is Owen Papineau'. This states a metaphysical necessity because the 'secondary intension' of 'David Papineau' picks out the person David Papineau at all possible worlds and there are no possible worlds where that person's father is not Owen Papineau¹⁰. That is, when we consider 'worlds as counterfactual', 'David Papineau' never refers to someone who does not have Owen Papineau as a father.

But where did that come from? How are independently given facts of conceivability supposed to tell us that there are no possible worlds where David Papineau's father is not Owen Papineau? By way of comparison, note that there are plenty of possible worlds where David Papineau's birthplace is different from Como, his actual birthplace. So why are we entitled to assume that parents are necessary to people, but not birthplaces? This doesn't look like anything to do with conceivability. After all, it is no less conceivable that David Papineau's father is other than Owen than that his birthplace is other than Como. In the absence of some further story here, it looks as if the explanation of metaphysical modality in terms of secondary intensions, far from being grounded in facts of conceivability, is simply tracking some independently given structure of metaphysically modal facts.

Of course this does not yet decide the issue. Those who think that metaphysical possibility is grounded in conceivability will admit that the connection is not straightforward. After all, we all know, following Kripke, that possibility cannot be read straight off from conceivability—it is scarcely news that the conceivability of David Papineau's being sired by someone other than Owen does not guarantee its possibility. So, if there is a connection between metaphysical possibility and conceivability, it can't just be that the latter implies the former.

But what then is the connection? What exactly does conceivability have to do with the impossibility of my having a different father, but not a different birthplace? Even though both are initially

¹⁰ I shall assume for the sake of the argument that parents are essential to their children. If you have doubts about this, feel free to substitute your favourite species of de re necessity. The argument will work equally well with any de re necessity, including identities (which are discussed explicitly in 3.4 below).

conceivable, is there some further sense in which my having a different father than Owen is nevertheless conceivable than my having a different birthplace than Como?

Perhaps the idea is that, once we know the relevant a posteriori facts, then different fathers are rendered inconceivable in a way that different birthplaces are not. After it is given that David Papineau's father is Owen and that his birthplace is Como, then it ceases to be conceivable that he has a different father, but not that he has a different birthplace.

But this suggestion does not bear much examination. Let us assume that my father is Owen Papineau. This supposition does indeed rule out that my father not be Owen. After all, 'David Papineau's father is Owen and his father is not Owen' is a straight contradiction. But exactly the same applies to birthplaces. Assume my birthplace is Como. This assumption now similarly rules out that I am born elsewhere, for 'David Papineau's birthplace is Como and his birthplace is not Como' is equally a straight contradiction. Assuming the empirical facts doesn't seem to take us any closer to an asymmetry in conceivability which might explain why parents but not birthplaces are necessary.¹¹

I have heard it proposed that an asymmetry will emerge if we make sure we are dealing with de re propositions. But this does not help either, as long as what is at issue is the conceivability of de re non-modal contents (I will come to modal contents in a second). I take it that a de re proposition is a singular proposition, for instance one that has the particular person David Papineau as part of its content. Well, focus on such propositions as much as you like—make sure you are thinking of David Papineau, that particular person. It surely remains conceivable both that his father not be Owen and his birthplace not be Como, while it remains inconceivable that his father is Owen and not Owen, and that his birthplace is Como and not Como. Again, we seem to lack any asymmetry in conceivability with which to account for the different modal status of parents and birthplaces.

3.3 Inconceivable Modal Contents What about the contrast between 'David Papineau has a different birthplace than his actual birthplace' and 'David Papineau has a different father than his actual father'? Well, now we do plausibly get an asymmetry in conceivability. It is conceivable that David Papineau was born somewhere different from his actual birthplace, but not that he was sired by someone different from his actual father. However, this is no good for those who want to explain metaphysical modality in terms of conceivability. If such an explanation is not to be trivial, the statements whose conceivability or inconceivability is supposed to ground modal possibilities or necessities had better not themselves contain modal notions. The references to actuality in the statements above violate this requirement.

The point is clearest if we consider such 'modal introduction conditionals' as: 'If water is H₂O, then necessarily water is H₂O' or 'If David Papineau's father is Owen Papineau, then necessarily David Papineau's father is Owen Papineau'. Nothing in my position requires me to deny that these claims are a priori and their negations inconceivable. But this is not what is needed for an explanation of metaphysical modality in terms of conceivability. Such an explanation is supposed to explain the nature of modality in terms of the conceivability or inconceivability of non-modal claims. The conceivability or otherwise of claims with explicitly modal contents is beside the point. Such claims simply take for granted the modal notions that we are trying to analyse.

The same point applies, if not quite so obviously, to the suggested explanation of the modal asymmetry between fathers and birthplaces in terms of the differential conceivability of particular people lacking their actual fathers or birthplaces. To talk of fathers or birthplaces that are

¹¹Cf Sonia Roca-Royes' incisive and wide-ranging 'Conceivability and de re modal knowledge' (2011) which argues in far greater detail than is possible here that the supposition of such facts as that water is H₂O in no sense renders their negations inconceivable

different from actual ones is already to trade in modal notions, since this talk refers to the putative fathers and birthplaces that you might possibly have had. Again, such talk assumes just the kind of modal notions whose content we are trying to be elucidate.

Perhaps it is worth dwelling on this point for a moment. Let us suppose, for the sake of the argument, that the structure of the modal realm is indeed determined quite independently of anything to do with conceivability, perhaps in some such way as suggested at the beginning of this section. Then of course it is open to us to form concepts—such as necessary, possible, actual, and so on—to refer to aspects of what we take this modal realm to contain. And then no doubt certain claims involving these concepts will become inconceivable for us ('You could have been sired by someone different from your actual father'). But this does not mean that the realm that these concepts refer to itself depends in any way on what is conceivable.

Consider an analogy. Suppose that we coin the concept metabolic to pick out facts which involve the workings of living bodies. Then it will presumably become inconceivable, say, that 'Human blood circulates oxygen, yet it is not metabolic that human blood circulates oxygen'. But this surely does not show that the metabolic facts are grounded in what is conceivable, in the way that Chalmers holds the metaphysically modal facts are.¹²

What about Philip Goff's suggestion in the last section that metaphysical possibility can be grounded specifically in what is transparently conceivable? The points I have made so far do not bear directly on this thesis, as transparent conceivability is not guaranteed by ordinary conceivability. Maybe 'David Papineau's father is not Owen Papineau' is ordinarily conceivable, but not transparently conceivable, in line with the idea that only transparent conceivability ensures metaphysical possibility.

However, my argument so far does put a significant amount of pressure on the idea of transparent concepts. To account for the metaphysical possibility of David Papineau being born somewhere else than Como, we will need a transparent concept that renders this conceivable. But we don't want this same transparent concept to render it conceivable that David Papineau's father not be Owen Papineau, on pain of ending up with a corresponding metaphysical possibility. So it looks as if transparent concepts of particular people will have to include information about their parents, but not about their birthplaces. You are only conceiving David Papineau transparently when you conceive him as having Owen as his father, though you can well conceive him transparently without knowing Como is his birthplace. It is an interesting question whether these constraints on transparent concepts can be independently motivated, as opposed to simply being read off what we already know about the space of metaphysical modality. Such a motivation will be needed to allay the suspicion that the relevant notion of a 'transparent' concept has simply been cooked up to deliver the right modal answers and therefore fails to offer a genuine explanation of metaphysical modality.

3.4 Two Different Spaces Some readers may have been wondering whether the disconnection between conceivability and possibility is specific to de re modality, and whether it can therefore be put to one side as a special case.

Well, the disconnection is indeed specific to de re modality. If we put de re modal claims to one side, then necessary truth would line up nicely with a priority, and contingency with a posteriority,

¹²In 2010 footnote 3 p. 188 Chalmers suggests that specific modal profiles are associated a priori with names of spatiotemporal objects (his example are 'Goliath' for the statue and 'Lump' for the piece of clay). This seems right. But, as above, this will yield no explanation of modal facts in terms of the conceivability of non-modal contents, given that the concepts expressed by the relevant names will contain explicitly modal information.

which would leave us with no a posteriori necessities of any kind, and so a fortiori no strong necessities.

However, in the present context of argument, de re modality can scarcely be viewed as a special case. Chalmers' anti-physicalist case hinges crucially on the thesis that the conceivability-possibility link applies in the de re realm as much as elsewhere. (Thus his physicalist opponents maintain that certain de re brain-mind claims are necessarily true though conceivably false; Chalmers retorts that even in these de re cases conceivable falsity must point to a genuine possibility of brain-mind dissociation.)

What if we focus on the necessity of identity? Maybe such esoteric de re necessities as the necessity of parents can't be grounded in conceivability. But perhaps the more basic necessity of identity can be so grounded. And maybe this will be enough for Chalmers. Physicalism isn't always phrased as an identity thesis. But it can arguably always be forced into this mode.¹³ So perhaps it will suffice to block physicalism if it can be argued that, for identity claims at least, modality is grounded in conceivability, and strongly necessary a posteriori identities are therefore unacceptable.

But the points made so far allow us to see that even the necessity of identity is nothing to do with conceivability. Of course, when we 'consider worlds counterfactually', we will find none where Cicero is not Tully. But this cannot be explained in terms of inconceivability. Just as 'secondary intensions' needed to be constructed post-hoc to track such independently-fixed de re modal facts as that parents are necessary to their offspring, so too do they need to be constructed post-hoc to track the independently-fixed necessity of identity. I argued earlier that appeals to conceivability do nothing to explain why there are no metaphysically possible worlds where David Papineau's father is not Owen. By the same coin, appeals to conceivability cast no light on the lack of any metaphysically possible worlds where Cicero is not Tully.

Of course, the necessity of identity is forced on us as soon as we allow that the same entities can be denizens of different 'possible worlds'. Once we countenance such trans-world existence, then it is open to us to quantify into modal contexts, or to construct rigid designators which track such entities across worlds—and then a familiar argument which appeals to no more than the indiscernibility of identicals takes us quickly to the necessity of identity.

But there is nothing in considerations of conceivability themselves to call for trans-world existence. Trans-world existence is needed to deal with de re necessities, not to track questions of conceivability.

Remember that it is conceivable that 'Cicero ≠ Tully'. So, as far as conceivable scenarios go, we need to admit a scenario which contains both a 'Cicero' and a different 'Tully'. Is either of these personages the same entity as the real Cicero? If we are working only with scenarios generated by facts of conceivability, this looks like a funny question. This is because the apparatus of conceivable scenarios does not itself require us to suppose that real people (such as the actual Cicero) can be denizens of non-actual scenarios.

The reason we want to allow that real people can inhabit non-actual worlds is not to model conceivability, but precisely to let us address such de re modal questions as whether Cicero, that very person, might have had a different father, or a different birthplace. Trans-world existence, and the necessity of identity which follows, are thus corollaries of our concern with de re modal questions, and so no more grounded in questions of conceivability than they are. We need them to

¹³Cf Papineau 2011 footnote 1.

state which features of things are necessary and which merely possible. But we could do perfectly without them if our only concern were with conceivability.

Earlier I floated the idea that metaphysical modality reflects facts about the realm of alternative causal histories. Unfortunately there has been no opportunity to offer any positive defence of this suggestion here. Still, I hope that my arguments have at least cast some doubt on the alternative view that metaphysical modality reflects facts about conceivability and should therefore be expected to answer to the same space of possible worlds as epistemic possibility.¹⁴

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¹⁴ I would like to thank Philip Goff, Carrie Jenkins, Sonia Roca-Royes and the participants in a symposium on strong necessities at the University of Hertfordshire in April 2011.