Philosophia (2009) 37:281–306
DOI 10.1007/s11406-008-9168-y

Consciousness and Modal Empiricism

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Received: 1 March 2008 / Revised: 16 July 2008 / Accepted: 1 October 2008 /
Published online: 25 October 2008

Abstract David Chalmers supports his contention that there is a possible world populated by our zombie twins by arguing for the assumption that conceivability entails possibility. But, I argue, the modal epistemology he sets forth, 'modal rationalism,' ignores the problem of incompleteness and relies on an idealized notion of conceivability. As a consequence, this epistemology can't justify our quotidian judgments of possibility, let alone those judgments that concern the mind/body connection. Working from the analogy that the imagination is to the possible as perception is to the actual, I set forth a competing epistemology, 'modal empiricism.' This epistemology survives the incompleteness objection and allows some of our everyday modal judgments to be justified. But this epistemology can't justify the claim that Zombie World is possible, which leaves Chalmers's property dualism without the support it needs.

Keywords Possibility · Conceivability · Consciousness · Zombies

In a series of works, most notably *The Conscious Mind*, David Chalmers argues against materialism and for "panprotopsychism" (2002, p. 198). Chalmers's chief argument for this position turns on the claim that it is possible for there to be a world populated by our zombie twins, people who are like us in every way except one: they don't have phenomenal experiences. To support the claim that there could be such a world, Chalmers contends that this Zombie World is conceivable and hence possible. In this respect, Chalmers's philosophy of mind depends on the viability of the assumption that conceivability provides us with a guide to possibility. But does conceivability provide us with such a guide?

Not surprisingly, Chalmers argues that it does. But his defense of this assumption falls prey to a classic objection, *the problem of incompleteness*. Because what we conceive is always incomplete, we can't rule out the possibility that there is some

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contradiction which will undermine the modal belief at issue. Obviously, this failure of Chalmers's modal epistemology doesn't by itself give us reason to reject this assumption. In fact, I will illustrate another way in which conceivability can provide us with a guide to possibility. But, I contend, this alternative won't support a belief in the possibility of a Zombie World.

This paper falls into four parts. First, I set out Chalmers's 'modal rationalism' and argue against it. By ignoring the problem of incompleteness and relying on an idealized notion of conceivability, Chalmers's view has all the virtues of theft over honest toil, to pilfer a phrase of Russell's. In the second and third parts of this paper, I set out a competing modal epistemology that I call 'modal empiricism.'[1] At first sight, a theory so entitled might seem absurd, since possible worlds are not open to empirical inspection. Nevertheless, this view deserves its name, since it takes its cue from an oft-cited analogy: the imagination is to the possible as perception is to the actual. In the fourth and final section, I deploy this modal epistemology in the context of consciousness. I argue that via this modal epistemology we can't justifiably claim that Zombie World is possible. That said, I have no particular stake in any ontology of mind. My primary goal in this paper isn't to undermine panprotopsychism or prop up materialism but to present a competing modal epistemology and trace its consequences for what has become a key argument in the philosophy of mind. With this in mind, let us consider now Chalmers's modal rationalism.

Modal Rationalism

Modal rationalism is an ambitious doctrine. Conceivability, for Chalmers, does not merely provide us with defeasible justification for our modal claims. Rather, it provides us with proof of possibility. "On my view," Chalmers writes, "it is a priori, if nonobvious, that conceivability entails possibility" (2002, p. 198).[2] The methods of conceivability that provide us with such proofs are for Chalmers *ideal positive primary conceivability* and *ideal negative primary conceivability*. Chalmers claims that ideal positive primary conceivability will provide us with our best guide to possibility. So, we will begin by considering this method, referring to it at times as the *modal imagination*.

First, for Chalmers, the modal imagination requires *positive* conceivability. That is, there must be a mental object (in this case an intuition) that we evoke and it must be a mental object about which one takes a particular attitude. More specifically, to modally imagine situation S, one must have an intuition about a situation or a world that one takes to verify S. A situation, for Chalmers, is "a configuration of objects and properties" (2002, p.150).[3]

[1] See Hanrahan, 2007.

[2] See also here Chalmers (1996, p. 68) and (2002, p. 198).

[3] As indicated above, Chalmers focuses on the conceivability of situations (which indicates that *de re* modality is at issue). Later I focus instead on the conceivability of propositions (which indicates *de dicto modality*). But we both move between these two vocabularies. I assume our doing so is justified because the vocabulary of one can be translated without loss into the other.

Second, this kind of conceivability is *primary* conceivability, or conceivability according to the primary intensions of the terms used in describing S. The primary intension of a term captures the way in which that term's reference is "fixed" in the actual world; thus the primary intension of 'water' might be 'that which plays the watery role' (1996, p. 57). In the actual world, H_2O plays this watery role. But we can conceive of worlds in which this role is played by something other than H_2O, say XYZ. Thus, it is primarily conceivable that water not be H_2O. The secondary intension of a term captures instead what that term rigidly designates (in the case of 'water,' H_2O). Taken in this sense, 'water' refers to H_2O in every possible world. After all, identity statements, when true, are necessarily true, and in the actual world, water is H_2O. Given this, while it is primarily conceivable that water could fail to be H_2O, it is not secondarily conceivable, for 'water' has a secondary intension, whose extension is always H_2O, no matter what world we are considering.[4]

Finally, the form of conceivability in question must also be ideal, rather than *prima facie*, or even *secunda facie*, conceivability. It is with respect to this requirement that Chalmers's modal rationalism founders on the shoals of the incompleteness objection. To see this, we need to consider the problems that compel Chalmers to reject prima and secunda facie conceivability in favor of ideal conceivability.

For Chalmers, S is *prima facie* conceivable if one can specify a few of the important details associated with the imagined situation at issue and then reflect on those details to establish that they cohere and verify S. The problem here is obvious. As even Chalmers recognizes, the dearth of details might hide a contradiction.[5] Thus, if prima facie conceivability were used as a guide to possibility, we might

[4] Chalmers hold that most of the objections brought against the conceivability principle can be undermined if we attend to this distinction between primary and secondary conceivability. Thus, for example, it is argued that we can conceive of the impossible for we can seemingly conceive of a world in which H

(H)Water is not H_2O.

is true. But if the impossible is conceivable then, surely, conceivability can't provide us with a guide to possibility. To this, Chalmers admits that if we take 'water' in its primary intension, H is clearly conceivable. For we can easily conceive of a world in which XYZ plays the watery role. But no one would consider such a world an impossibility. If instead we take 'water' in its secondary intension, Chalmers admits as well that H describes impossibility. For given the secondary intension of 'water,' H reduces to the contradictory claim that H_2O is not H_2O. But contradictory claims are by anyone standards inconceivable. Thus, H understood in terms of its primarily intension is conceivable but what is conceived is considered possible. And, H understood in terms of its secondary intension describes what is considered an impossibility, but H so understood is inconceivable. Thus, by applying this distinction, Chalmers defeats this counterexample and via this same strategy, he believes he can defeat others like it as well, thereby removing the central reason for rejecting his modal epistemology (1999, p. 489)

Note though that Anthony Brueckner (2001) challenges Chalmers on this point, arguing that he does not succeed in sidestepping such objections via this distinction between primary and secondary intensions. But, even if he has, it remains plausible that, as Stephen Yablo argues (1999a, pp.457–8), there are genuine impossibilities that do not turn on these intensions. Not all undetected impossibilities involve a confusion between primary and secondary intensions.

[5] I am following Chalmers here in using coherence and consistency interchangeably.

declare S possible when "a moment's reflection" would uncover a contradiction that would preclude such a declaration (2002, p.154). To avoid this problem, we then have to move to secunda facie conceivability. *Secunda facie* conceivability entails that more of the details associated with the situation be specified and checked for verification and consistency. But, of course, just including more details won't preclude the possibility of a hidden contradiction: hence we must move to *ideal* conceivability. "When S is ideally positively conceivable, it must be possible in principle to flesh out any missing details of an imagined situation that verifies S, such that the details are imagined clearly and distinctly, and such that no contradiction is revealed" (2002, p. 153).

For Chalmers, possible worlds are identified with "equivalence classes of qualitatively complete descriptions" (2002, p. 193). Thus, if Chalmers had offered an *in practice* (as opposed to an *in principle*) formulation of the requirements associated with ideal conceivability, clearly we could conclude that S was possible, if we had successfully conceived of S in this way (2002, p. 193). For to be required to fill in *any* "missing" detail as well as any "arbitrary" detail is to be required to fill in *all* such details (2002, p. 153). Hence, an *in practice* formulation of these requirements would in the end be no different from the requirement to construct a qualitatively complete description of a world. But we can't construct such a description, for it includes an infinite number of propositions. And, of course, any epistemology that requires us to do what we in fact can't do isn't to be considered an epistemology.[6]

Thus, neither *prima facie* nor *secunda facie* positive conceivability are up to the task of providing us with a guide to possibility. And we aren't up to the task of operating with an *in practice* formulation of the requirements associated with ideal conceivability. Of course, in both *The Conscious Mind* and his more recent work, Chalmers is quite explicit that ideal conceivability doesn't involve our describing a whole world. In *The Conscious Mind*, Chalmers makes the following claim:

> In practice, to make a conceivability judgment, one need only consider a conceivable *situation*—a small part of a world—and then make sure that one is describing it correctly. If there is a conceivable situation in which a statement is true, there will obviously be a conceivable world in which the statement is true, so this method will give reasonable results while straining our cognitive resources less than conceiving of an entire world!
>
> (Chalmers 1996, p. 67)

And in "Does Conceivability Entail Possibility?" Chalmers claims that the requirements associated with ideal positive conceivability are demanding but "not unreasonable"

[6] There is an instructive parallel here with internalist theories of knowledge that rely on an idealization condition. Given that such requirements can't ever be met by us, both our everyday claims to knowledge and those of the more exotic variety go by the boards, and at least one such theorist, Laurence BonJour, admits as much. BonJour argues that "any non-externalist account of empirical knowledge [such as his] will impose standards for justification which very many beliefs that seem commonsensically to be cases of knowledge fail to meet in any full and explicit fashion...[A]lthough it would take very strong grounds to justify a very strong form of skepticism, not nearly so much would be required to make acceptable the view that what common sense regards as cases of justification and of knowledge are in fact only rough approximations to an epistemic ideal which *strictly speaking* they do not satisfy" (2000, 193).

for they are just "the strictures typically demanded of good thought experiments" (2002, p. 153). "A little reflection" on the imagined situation is all that is necessary (2002, p. 154). But can positive conceivability provide us with a guide to possibility without our having to construct a maximally consistent set of propositions? To see that it can't, consider why it is that the positive conceivability of S supposedly justifies the conclusion that S is possible.

Say I positively conceive of S, and hence declare S possible. But say someone questions my modal declaration. (Let's refer to my interlocutor here as 'the modal skeptic.') The modal skeptic would be justified in asking me about the details of the situation I have intuited. And I would be obligated to demonstrate that those details in fact cohere and verify S, for I am the one who has declared S possible. And if the skeptic isn't satisfied with the details I have offered, she could legitimately demand more and then more again. Why is this so? On Chalmers's theory, what justifies my declaration that S is possible isn't that the situation I have intuited can be described in a way that coheres with and verifies S. Rather, it is the fact that this situation can be embedded in a world that can itself be described in a way that coheres with and verifies S. For what it is for S to be possible is just that there be such a complete and coherent description. Given this, the demands of this persistent modal skeptic can and should ultimately require me to construct a maximally consistent set of propositions, not just *in principle* but *in practice*. But, again, no one can ever meet this requirement; so ideal positive primary conceivability can't provide us with a guide to possibility.

Chalmers, though, isn't left without defenses. He can abandon positive conceivability and switch to negative conceivability. For Chalmers, S is *prima facie* negatively conceivable when a subject upon reflection "cannot rule out S on a priori grounds" (2002, p. 149). And S is *ideally* negatively conceivable "when it is not a priori that ~S" (ibid). Now, by making this switch from positive to negative conceivability, it might seem as if Chalmers avoids the problem of incompleteness. But this problem can only be avoided when the switch is to prima facie negative conceivability and, as we shall see, this method of conceiving can't provide us with a basis for a modal epistemology. Let's begin with prima facie negative conceivability.

Say this time I declare that S is possible because S is on my estimation prima facie negatively conceivable. According to Chalmers, what this means in practical terms is that when reflecting on S I can discern no "apparent contradiction" (ibid).[7] Given this, if the modal skeptic again challenges my declaration that S is possible, I am in the right if I ask her to point to what I can't see, an apparent contradiction associated with S. For through her challenge she is implicitly claiming that there is such a contradiction there. And if she can't then point to (or at least gesture at) that contradiction, my claim that S is possible has been left unscathed.

Note that in order to establish that S is prima facie negatively conceivable, I am not required to describe a possible world, either in part or in whole. I only need to

[7] See as well Chalmers (1996, p. 96) or footnote 8 below.

ascertain whether from my perspective there is an apparent contradiction associated with S. Note as well that nothing in the dispute that arises between me and the modal skeptic requires of either of us that we describe S in greater and greater detail. Thus, the nature of this dispute doesn't compel us to construct a maximally consistent set of propositions, as it does when we work with positive conceivability.

From this, we can see that this switch from positive conceivability to prima facie negative conceivability both shifts the burden of proof to the modal skeptic and enables us to bypass the problem of incompleteness.[8] But while avoiding the problem of incompleteness is well and good, if we avoid this problem by opting for a method of conceivability that can't provide us with a basis for a modal epistemology, we have done ourselves no favors. So, is prima facie negative conceivability up to this task?

As I have explained, to establish that S is prima facie negatively conceivable there must be no apparent contradiction associated with S. But a person's claim that there appears to be no such contradiction is often just a reflection of that person's intuitions about the possibility of that situation. Obviously, it would be best if our guide to possibility rose above the bare solicitation of such intuitions. If instead an epistemology rests at the level of intuitions, then the findings of that epistemology will always be subject to suspicion. For there is good reason to suspect that our intuitions record our prejudices, rather than reveal anything about possibility. Moreover, any epistemology that depends on intuitions has to confront the seemingly insurmountable problem of adjudication. Many don't share Chalmers's intuition about the possibility of Zombie World. How are we to determine whose intuition is to be trusted, Chalmers's or his critics'? If this question can't be answered, a modal epistemology based solely on these intuitions has to be declared bankrupt.

Thus, prima facie negative conceivability shouldn't be the basis of an epistemology. But Chalmers never claimed that it should be. He holds instead that it is ideal negative conceivability that provides us with a guide to possibility.[9] So

[8] Chalmers makes this very switch from positive to negative conceivability in his discussion of zombies. Chalmers claims that a world populated by our zombie twins is conceivable. Working with a notion of positive conceivability, Chalmers notes that he has a "brute intuition" that there could be such a world (1996, p. 96). Moreover, he claims both that such a world seems to him to be coherently describable and that "[he] can "discern no contradiction in the description" (ibid). To those who object, Chalmers challenges them to show him a contradiction in this description.

> In general, a certain burden of proof lies on those who claim that a given description is logically impossible. If someone truly believes that a mile-high unicycle is logically impossible, she must give us some idea of where a contradiction lies, whether explicit or implicit ...If no reasonable analysis of the terms in question points toward a contradiction, or even makes the existence of a contradiction plausible, then there is a natural assumption in favor of logical possibility (ibid).

By asking the opposition to show him a contradiction, he has switched from positive to negative conceivability, thereby avoiding the problem of incompleteness and shifting the burden of proof to his opposition.

[9] It is worth noting that Chalmers doesn't discuss *secunda facie* negative conceivability in any substantive way.

now the question is this: Can ideal negative conceivability avoid the problem of incompleteness and as well provide us with a guide to possibility?

Consider Chalmers's definition again. "S is ideally negatively conceivable when it is not a priori that ~S" (2002, p. 149). Notice that this definition tells us what it is for S to be ideally negatively conceivable, *not* what we must do to establish that S is ideally negatively conceivable. For while S's status as ideally negatively conceivable might be knowable a priori, this does not in itself tell us how we should go about ascertaining whether S enjoys this status, other than to say that we need not consider experiences. But this is exactly what Chalmers needs to tell us if he is to provide us with a modal epistemology. What then is involved in establishing that S is ideally negatively conceivable?

This is a question that Chalmers doesn't answer. And, unfortunately for him, all of the obvious answers to this question seem to invite the problem of incompleteness. Consider: one way to establish that S is ideally negatively conceivable would be to establish that there is at least one possible world in which S is the case. But if this is what is required, then ideal negative conceivability just reduces to ideal positive conceivability. And as I have already shown, the problem of incompleteness is unavoidable when the positive conceivability of S is at issue.

It might be that to establish that S is ideally negatively conceivable, one needs to consider both the proposition that describes S and those propositions that are implied by this description, and determine (via rational reflection) that no contradiction is contained within this set of propositions (subset S). For if there isn't a contradiction in subset S, we would then be justified in concluding that S is possible. To explain, if we determine that there is no contradiction in subset S, then we know that it could be combined with a larger set (subset L) such that together they would constitute a complete and coherent set of propositions. And we can know this without having specified any of the propositions contained in subset L. For if there is a proposition that would contradict any of the propositions contained in subset S, its negation would already be included in subset S and hence it couldn't be included in subset L. Thus, subset S and subset L must cohere and must, by definition, be complete, thereby justifying our conclusion that S is possible.

But, of course, if what is required in ideal negative conceivability is that we consider all the propositions implied by the description of S, then the problem of incompleteness, or some version of it, reemerges. For there are an infinite number of propositions implied by any one proposition and we can't ever consider each and every one of them. Thus, we won't be able to establish that there isn't a contradiction amongst these propositions, which means we won't be justified in concluding that S is possible.[10]

Chalmers's response to this objection would probably be similar to the response he offered when the problem of incompleteness arose with regard to positive conceivability. He would argue that just as we don't have to describe a whole world in order to conclude that S is possible, we don't have to consider every proposition that is implied by S prior to our drawing this same conclusion. We need to consider

[10] Tidman offers a similar objection to a related method of conceiving. See Tidman (1994, p. 304).

some respectable number and that will do for our purposes here.[11] He would then argue that if someone, i.e. our modal skeptic, objects, the burden is on her to uncover a contradiction amongst those propositions not yet considered.

But why would the modal skeptic agree to shoulder this burden? Why would she concede that it is now her job to find the contradiction? Again, consider why it is that we are justified in concluding that S is possible when S has been negatively conceived. It is only by considering all the propositions implied by the description of S that we can conclude that together subset S and L constitute a complete and coherent set of propositions. For we thereby foreclose the possibility of a contradiction arising in and among the propositions contained in these two subsets. But if this is why we are justified in concluding that S is possible, the modal skeptic need not settle for anything less than a consideration of each and every proposition implied by the description of S. Though Chalmers may claim that the number of propositions considered is sufficient to conclude that S is possible, there will always be an infinite number not considered, and this fact will justify the skeptic both in his refusal to shoulder the burden and in his rejection of Chalmers's conclusion.[12]

To sum up, with regard to both ideal positive and ideal negative conceivability, Chalmers insists that we need not do the impossible. We need not describe a whole world nor need we consider all the propositions implied by S. For if he had required the impossible, he would have rendered his modal epistemology no epistemology at all. But, for Chalmers, the source of the justificatory relationship between conceivability and possibility is in the end the fact that S's status as possible is constituted by whether S is included in a complete and coherent set of propositions. In other words, Chalmers justifies basing his conclusion that S is possible on the conceivability of S by referencing the fact that what it is for S to be possible is that S is included in such a set. Because this is the case, no matter how S is conceived (whether via ideal positive or ideal negative conceivability) the modal skeptic will always be justified in demanding more than what Chalmers requires. He will always be justified in demanding that a whole world be described (and not merely a situation) or in demanding that all of the propositions implied by S be considered (and not a mere selection).

Thus, since it is the coherence of the complete set of propositions that does the justificatory work for Chalmers, the modal skeptic need not ever settle for less than completeness when seeking to establishing S's modal status and hence she need not

[11] See Chalmers (1996, p. 67) or the quoted section on pages 4–5 above.

[12] I am not alone in objecting to Chalmers's theory on the basis that it suffers from the above problem of incompleteness. In "Conceivability, Possibility, and Physicalism," Sara Worley also offers a version of this objection. She argues that "To be conceivable, on Chalmers's view, is to be true in some conceivable/possible world. To determine whether a proposition is conceivable/possible, one must ask, for each world, whether the obtaining of that proposition would conflict with anything else that is true about that world." (Worley 2003, p. 20). If it does, we must deem that proposition inconceivable and hence impossible. If it doesn't, we can then conclude that p is possible. But, Worley contends, only a Laplacean demon could make such determinations. We mere mortals must instead rest on our intuitions that there either are or are not such contradictions. But such intuitions aren't a trustworthy basis for an epistemology of possibility. Hence, Worley argues, Chalmers can't conclude that Zombies are possible (or impossible, for that matter). I have shown above how this very problem of incompleteness affects Chalmers's theory regardless of whether or not he depends on ideal positive or ideal negative conceivability.

ever agree to shoulder the burden of proof. That said, the point at issue here isn't who has the burden of proof but rather how Chalmers himself precludes any justification for a claim about S's modal status by locating the source of that justification in the fact that S's possibility is constituted by its inclusion in a complete and coherent set of propositions. Though Chalmers does not require us to do the impossible, given the source of this justificatory relationship, it is only when we do the impossible that we can conclude that p is possible.[13]

Given all this, it is clear that we need to begin again. We need to develop an epistemology of possibility that doesn't suffer from the problem of incompleteness but yet doesn't avoid this problem by retreating to the ideal. In particular, we need to develop an epistemology that absolves us of the duty to construct a maximally consistent set of propositions, hence, an epistemology that does not rely solely on the fact that for p to be possible is for p to be included in just such a set.

I contend that such an epistemology can be based both on our ability to perceptually imagine and on our ability to tell stories. At the outset of "Does Conceivability Entail Possibility?" Chalmers bypasses these two methods, never really considering them to be candidates for guides to the possible. This is because neither the perceptual imagination nor story-telling is up to the task of providing us with proof of possibility. With regard to story-telling, anything can be conceived, even the impossible. With regard to the perceptual imagination, not only are some impossibilities seemingly conceivable, but some known possibilities are inconceivable.

In contrast, my goals for my modal epistemology are limited. I want only to establish that *in some cases* the conceivability of S *justifies* our belief that S is

[13] Some might suspect that Chalmers could avoid these problems by arguing that conceivability does not entail possibility, rather it merely provides us with a defeasible guide to possibility. On this weakened version of modal rationalism, if we can describe a coherent situation in which S is the case or if we can't immediately identify any contradictions implied by S, we have reason to believe that S is possible. Of course, if we describe more of the world around this situation or consider more of these implications, this reason might later be defeated. But this is why a weakened version provides us with only defeasible justification and not proof.

But why think that a mere description of a situation or a consideration of some of the propositions implied by S would provide us with even defeasible justification? The source of the justificatory relationship between conceivability and possibility presumably hasn't changed in the move to this weakened version. To justify their using conceivability as a guide to possibility, both versions depend on the fact that S is possible if S included in a complete and coherent set of propositions. And both versions give us no reason to justifiably ignore the fact that what we can conceive is hopelessly incomplete and hence might hide a contradiction. As a consequence, the modal skeptic always has reason to doubt the claims of the modal rationalist regardless of which version she employs. Again, no matter how many details are included in this description and no matter how many implications are considered, there will always be an infinite number left out and this fact will always give the modal skeptic good reason to conclude that enough hasn't been done to justify the belief, let alone prove, that p is possible. And, importantly, the modal skeptic can offer this argument while conceding that given the weakened version the modal rationalist need not produce a complete description and that as a consequence the modal rationalist's pronouncements are defeasible.

Of course, some will object here and claim that given the concessions made in this weakened version, the burden of proof is on modal skeptic to discover the hidden contradiction. But the burden of proof shifts to the skeptic only if there is reason to think that what is initially required of the modal rationalist in conceiving of p is sufficient to justify the belief that p is possible, despite the problem of incompleteness. But, again, no such reason has been given.

(I would like to thank a reviewer from this journal for suggesting that I consider this variation on Chalmers's theory.)

possible. Justification is defeasible. Thus, unlike Chalmers, it isn't much of a worry for me that my epistemology might declare a proposition conceivable and hence possible when it isn't. Moreover, I do not intend my modal epistemology to provide us with a guide to *all* possibilities, just *some*. Given this, the fact that we can't conceive of every possibility via a particular method doesn't prevent that method from having a role within my modal epistemology. So, because my goals for my epistemology are limited in these ways, Chalmers's worries aren't mine and hence I can consider story-telling and the perceptual imagination as viable candidates for guides to the possible.[14]

Of course, the fact that I do have such limited goals for my epistemology might compel some to dismiss it. But given the current state of modal epistemology, isn't it worth figuring out whether any method of conceiving provides us with a guide to even a small set of possibilities? It is to this task that I now turn.

An Analogy

In what follows, I want to establish that a method of conceiving which involves the perceptual imagination can justify some of our beliefs about what is possible.[15] Given that this is my goal, it is worth unpacking the analogy cited earlier: the imagination is to the possible as perception is to the actual.[16] Obviously, this analogy can't be given a causal/metaphysical interpretation. For while most would agree that we perceive what we do because the actual world causes these perceptions in us, no one thinks that we imagine what we do because a possible world is similarly acting on us. What we need then is an epistemological interpretation of this analogy. Such an interpretation would go as follows: the conditions under which we are justified in taking a perception to be veridical are analogous to the conditions under which we are justified in taking an imagined image to be a guide to the possible.

With this interpretation in mind, the next question to ask is, what are the conditions under which we are justified in taking a perception to be veridical? Clearly this question can't be easily answered. Still, most would agree that one relevant condition is identified by the theory of explanationism.[17] This theory holds that each of us has an explanation of how the world works and this explanation is (from our individual perspectives) the best explanation in so far as it possesses more of the epistemic virtues than any of the other explanations available to us as

[14] Sosa also rejects the perceptual imagination because of its limited scope. But he admits that it may "perhaps provide a distinctive source of justification," though he does not explain how it might do this. See Sosa (2000, p. 2). Tidman makes a similar admission. See Tidman (1994, p.307).

[15] I am not seeking to describe how we actually go about justifying our modal claims. I am not in other words offering a theory of modal psychology. Rather, I am trying to establish how our imagined images could play a part in justifying our modal beliefs. In this way, what I am offering here is clearly a theory of modal epistemology.

[16] See Hart (1988, p. 10), Peacocke (1985, p. 31) and Yablo (1993 p. 7). In addition, see Hanrahan (2007) for a fuller discussion of my analysis of this analogy.

[17] For a full presentation of this theory see Harman (1965), Lycan (1988), and Thagard (1978).

individuals. On this theory, it is via such explanations that we can justify (among other things) our taking a particular sensory mental state to be a veridical perception. Specifically, we are so justified if that state and the account we can give of it via our best explanation satisfy certain requirements. These are:

1. The account we can give of that state as a veridical perception possesses all of the epistemic virtues to a greater degree than any of the other accounts we could have given and that account preserves if not promotes the epistemic virtues of our best explanation.
2. That same account includes or implies the claim that that state is a product of the normal workings of our senses that accurately reflects the way the world is.
3. The state must usually (*though not always*) be highly forceful and vivacious.[18]

If a particular sensory mental state or the account we give of it fails to satisfy these requirements, we should in most cases consider that state to be non-veridical and again via our best explanation determine whether it is an optical illusion or a product of our perceptual imagination (be it a hallucination or an image we willfully evoke). Given this, the mental states at issue here (referred to at times as '*images*') are associated equally with veridical perception, optical anomalies, and the conscious and unconscious operation of our perceptual imagination. That is, nothing about a particular mental state in and of itself *necessarily* marks it as a product of one these functions. Hence, we can ask which of these functions produced the state in question.

An example might help. When I was child, my family toured the country. As we were making our way across a desert, in the distance it appeared to me as if there was water covering the road. Initially, I took the images that had come to me to be veridical perceptions of water, and my doing so was perfectly justified. For these images were sufficiently forceful and vivacious and the best account I could give of them implied that they were veridical perceptions. I figured that a water main had burst in the chill of the night and I was seeing the water that had subsequently spilled out onto the road.

As we drove on, though, this water disappeared. Knowing that water couldn't evaporate so rapidly, I figured that I must have suffered from some sort of heat-induced hallucination. But it happened again and again, water appearing and quickly vanishing. I then learned from my much older brother that hot air rising from heated pavement refracts light in a way similar to the way in which water refracts light and as a consequence, when looking towards that air, it appears as if there is water where there is not. Upon changing my best explanation to incorporate this new information, I then justifiably took these images to be optical illusions.

[18] Sensory mental states are said to have qualities that vary in degree. What qualities these are and how they are best described is not important to my theory. I choose above to talk of force and vivacity merely for the sake of tradition and convenience. What is important to my theory is that these qualities, whatever they may be, are shared by those mental states produced via our imagination, via perception, and via optical anomalies. What is also important to my theory is that the degree to which a particular mental state possesses these qualities imperfectly indicates the origin of that state. So, for example, high degrees of these qualities are usually associated with those mental states produced via perception but can at times be associated with imagined images or even optical illusions.

Note that my beliefs here spanned the spectrum. I began by believing that these images were veridical perceptions, then hallucinations, and finally optical illusions. Each belief, though, was justified (for a time), and what provided the justification was my changing ability to account for these images via my best explanation. Importantly, each image was as vivacious and forceful as the last.

Note also that though my initial belief in the veridicality of these perceptions was justified, in the end I was right to conclude that there was no water there. So, truth and justification pull apart for an explanationist. This fact allows another method of conceiving, viz., story-telling, to play a role in the justification of some of our non-modal beliefs. After all, there was no water on the road that day, let alone a broken water main. Within the confines of my best explanation, I concocted this story, this bit of fiction, and it is this story which in part justified my belief that I was seeing water. Thus, we can see here how story-telling has a role even in the justification of our perceptual beliefs.

So, images and stories together justify our beliefs about what is actual. Might similar images and stories (produced through our various abilities to conceive) justify some of our beliefs about what is possible? To see how they might, let us consider another example.

Curried Black-Eyed Peas

While writing this paper, Walter, a fellow philosopher, and I decided that we had to make a curried black-eyed pea salad. Following Chalmers's recipe, Walter went to the store and purchased all the necessary ingredients, including the twelve cups of black-eyed peas, seven peppers, and two large onions.[19] We then started preparing the meal and as Walter was chopping away at the various vegetables, I started to worry. Was this a good idea? In response to this query, I intended to imagine a culinary disaster and a series of images came to me that were to some extent special. These images were of Walter accidentally slicing through one of his fingers as he diced up the onions and they were *for the imagination* quite forceful and vivacious.

In what follows, I will argue that my ability both to call forth these images and to tell a certain kind of story about them will justify my belief that the following proposition

(F) *Walter has cut off one of his fingers*.

is possibly true. My argument here has two parts. First, I will establish that there is a possible world in which my counterpart, *Rebecca*^{2}, is justified in taking F to be true.[20] Second, I will establish that I am justified in considering Rebecca^2 a reliable

[19] See Chalmers (1996, p. 9 and p. 359, footnote 4).

[20] In speaking of 'Rebecca^2' I do not mean to imply anything about the numerical identity (or lack of it) between Rebecca and her counterpart. The superscript is merely a convenient way to indicate that being who is in some sense me in a possible world. In fact, my modal epistemology is neutral with respect to the various metaphysical theories of transworld individuals. As we will see, my epistemology depends on the claim that Rebecca^2 and I share all or most of our first person epistemic properties, i.e., those first person accessible properties and states that are relevant to our beliefs and our justificatory practices. But the debate over transworld identity has never turned on claims about these epistemic properties. Thus, I can ascribe to Rebecca^2 and myself sameness in these properties without assuming either that Rebecca^2 is me or just my counterpart.

witness with respect to what is happening in her world. And, of course, if I can establish that I am so justified, I will then be justified in believing that there is a possible world in which F is true.[21]

To begin, note that whatever we imagine, we could have perceived either veridically or non-veridically.[22] That is, if we conjure up an image via our imagination, an image with the same qualities and content (*from the first perspective*) could have come to us via a pathway associated with our sensory faculties. This is because the images produced by our imagination are constructed in some way out of elements of what we have previously perceived. So, it stands to reason that the images produced by the imagination could have been produced through the workings (standard or otherwise) of our sensory faculties. Thus, the fact that via my imagination vivid and forceful images came to me of Walter slicing through his finger means that these same sorts of images could have come to me via a pathway associated with my sensory faculties. Now, to say that something can be the case is just to say that there is a possible world in which that something is the case. Hence, we can conclude that there is a possible world in which Rebecca^2 has had images come to her somehow via the workings of her sensory faculties, images which shared from the first person perspective the same qualities and content as my images of Walter severing his finger.

Be careful here. No one should assume that these images were veridical. To do so would beg the question, since it would be tantamount to assuming that in this possible world Walter's counterpart, *Walter*^{2}, has in fact cut off his finger, and Rebecca^2 witnessed this incident. Instead, we should keep in mind what I noted above. These perceptions could be either veridical or non-veridical. Thus, these images could be either optical illusions or veridical perceptions. Neither of these metaphysical options has been foreclosed or presupposed by the mere fact that these images came to Rebecca^2 as a perception via the workings of her sensory faculties. In fact, because neither option has been foreclosed or presupposed, the door to the epistemological question has been opened. Given her best explanation, is Rebecca^2 justified in taking these images to be veridical perceptions, optical

[21] In this section, I present the basics of my theory of modal epistemology, modal empiricism. For a more complete presentation of this theory, see Hanrahan (2007).

[22] I want to explain how the imagination can provide us with a guide to possibility. And I am assuming that if you can imagine that p, then p can be perceived. With this assumption, though, might circularity already be looming?

In response to this, we need to be careful with what exactly I am assuming here. I am not assuming that if I can imagine p, then p can be veridically perceived. If I were, then this objection would hold. For if p can be veridically perceived then p must be possible. Instead, I am only assuming that if I can imagine p, p can come to me in some way through a pathway associated with my sensory faculties. In this way, I am being neutral with regard to whether or not this perception is veridical. And in so far as I am being neutral in this way, no conclusion can be drawn as to the modal status of p. Thus, I beg no question here for I am not using perceive as a success term. That said, this assumption does encapsulate a bit of modal knowledge. I am taking virtually as a given that it is possible to perceive (veridically or non-veridically) what we have imagined. But even admitting this doesn't doom my argument. For this modal knowledge doesn't in any way imply that it is possible for Walter to have cut off his finger. Thus, I am not trapped in a vicious circle here and hence my argument can proceed. For a fuller discussion of this assumption see Hanrahan (2007).

illusions, or hallucinations? Or should she conclude that she willingly brought forth these images via her imagination?

To answer this question, consider the following: Up until the point at which I intended to imagine this culinary disaster, Rebecca^2 and I would not have differed with respect to our first person epistemic properties. More specifically, up until that point we two would have shared (again, from the first person perspective) the same beliefs, and experiences.[23] We would have also engaged in the same justificatory practices, which means that we both would have employed the same best explanation in the same way. Thus, prior to my intention to imagine, Rebecca^2 and I are what I will refer to as *epistemic twins*; i.e., we share all those first person accessible properties and states that are relevant to our beliefs and our justificatory practices.[24]

But, at the point at which I formed this intention to imagine, technically speaking, Rebecca^2 and I ceased being twins.[25] For at that point a difference emerges with respect to our first person epistemic properties. Again, Rebecca^2's images would have been as forceful and vivacious as my images. And, again, from the first person perspective, our images would have shared the same content. But I formed the intention to imagine and these images of Walter severing his finger then came to me. Such intentions don't accompany those images, whether veridical or not, that come to us via the workings of our sensory faculties. So, because Rebecca^2's images came to her via these faculties, her images, unlike mine, were not accompanied by an intention to imagine. Thus, Rebecca^2 and I differ from each other epistemically, which means that technically we are no longer epistemic twins.

But, even so, *at least initially* we should still be considered for all intents and purposes so related. For the differences between Rebecca^2 and me are minimal from a first person perspective. The overwhelming majority of our beliefs are still the same, as are our practices. Moreover, the mere fact that Rebecca^2 didn't call forth these images won't cause her to modify her best explanation, thereby making it different from mine. At least initially, we would still employ the same best explanation in the same way.

[23] For Chalmers, experiences have two separable components, a psychological component and a phenomenal component. At this point, I need not differentiate between these two components but later in my discussion of zombies I will have to.

[24] Epistemic twins shouldn't be confused either with the Kripkean notion of an epistemic counterpart or with Putnam's twins located on Earth and Twin Earth. Epistemic twins, like Kripkean counterparts and Putnam's twins, share each others first person epistemic properties. But they need not share any other properties as they would if they were Kripkean counterparts of each other. And they need not be "molecule for molecule identical" as they would if they were a pair of Putnam's twins, see (Putnam (1975): 18 and Kripke (1972)).

[25] Some will argue here that Rebecca^2 and I have never been epistemic twins. For my mental life is and has been fundamentally different from Rebecca^2's. My mental images are, for example of Walter, while Rebecca^2's images are of Walter^2. Obviously, the kinds of differences at issue here don't emerge just with respect to Walter and mental images, but also with respect to virtually all of our propositional attitudes. Hence, Rebecca^2 and I haven't and in fact can't be twins.

But these kinds of differences are differences that only emerge from the third person perspective. From the first person perspective, Rebecca^2's images, beliefs, and experiences, are indistinguishable from mine. And it is this fact, this sharing of our first person epistemic properties, that makes Rebecca^2 and me twins.

Now, I took my images to be products of my intentional imagination. What could Rebecca^2 justifiably say about her images? Would she also conclude that she willed herself to imagine these images? Or would she take these images to be hallucinations, optical illusions, or veridical perceptions?

Obviously, Rebecca^2 won't draw the same conclusion I drew about these images. Given my and hence Rebecca^2's best explanation, a person is to conclude that an image is a product of her intentional imagination (as opposed to a hallucination) only when that image is accompanied by the intention to imagine and Rebecca^2's images, unlike mine, were not so accompanied, as we just learned. Nor would Rebecca^2 take these images to be optical illusions. For on our best explanation, an image that has come before our mind's eye is to be taken to be an optical illusion only in specific circumstances, e.g. when the light is particularly odd or when in the presence of a Magic Calendar. From my perspective, none of the conditions associated with optical illusions held that night as we were preparing the black-eyed peas. Thus, since we are for all intents and purposes epistemic twins, the same must be true from Rebecca^2's perspective: she won't have cause to take these images to be optical illusions.

But might Rebecca^2 have reason to take these images to be hallucinations? Rebecca^2's images were as forceful and vivacious as my imagined images were and while both of our images had a high degree of these qualities, they still weren't as forceful and vivacious as the typical veridical perception. Doesn't this fact, coupled with the fact that Rebecca^2 didn't intend to imagine anything here, give her reason to take these images to be mere hallucinations?

In response to this, note that on our best explanation it is acknowledged that veridical perceptions can at times lack force and vivacity, while other kinds of images can be surprisingly forceful and vivacious.[26] Thus, the fact that Rebecca^2's images lacked some degree of force and vivacity doesn't by itself compel her to conclude that she was hallucinating. Moreover, on both my and Rebecca^2's best explanation, the conclusion that a person is hallucinating is to be drawn only when that person suffers from some sort of long or short term epistemic impairment, like a psychological disability, sleep deprivation, or the ingestion of a psychotropic substance. But as far as I can tell, I wasn't impaired in any of these ways at the time these images came to me. Hence, Rebecca^2 won't think she was so impaired either, which means she will have no reason to think that she was hallucinating.

So, by a process of elimination alone, Rebecca^2 is seemingly justified in taking these images to be veridical perceptions. But the case here is stronger than this. Rebecca^2 also has positive reasons for taking these images to be veridical. As was explained, our best explanation acknowledges that veridical perceptions can at times lack force and vivacity. Given this and given the degree to which Rebecca^2's images

[26] The water example above illustrates how our optical illusions can possess the same qualities as our veridical perceptions. Instances in which imagined images possess the same qualities as veridical perceptions are littered throughout Oliver Sacks's work, see most recently, (2003). And as Colin McGinn notes "[m]aybe images are typically *more* indeterminate than percepts, but both seem to admit of some indeterminacy; if so, there is no ground for a sharp distinction here" (2004, p.25).

did possess these qualities, I can safely assume that Rebecca^2's images were sufficiently forceful and vivacious to be considered veridical (requirement 3 above).[27] Moreover, if I ignore the fact that my images were accompanied by an intention to imagine, I can tell a story within the confines of my best explanation that would justify me in taking them to be veridical perceptions.

This story would include the fact that Walter's culinary skills are limited to microwaving Hot Pockets. It would also include the fact that Walter can't talk philosophy (as we were that night) and do anything else. For he gets so distracted by his arguments that he fails to notice when danger looms and care needs to be taken. Finally, it would include the fact that my knives are quite dull and a good deal of pressure needs to be applied to cut anything. Thus, using this information contained in my best explanation, I can tell a story detailing how Walter came to cut off his own finger while I was looking on.

Now, because I can tell this story, this same sort of story would be available to Rebecca^2 (requirements 1 and 2, above). For again, she employs the same best explanation that I employ. And, importantly, when telling this story, she (unlike me) need not ignore anything, for again, Rebecca^2's images were not accompanied by the intention to imagine. Thus, the images before Rebecca^2's mind's eye and the story she can tell about these images together fulfill the necessary requirements that allow her to justifiably take these images to be veridical perceptions. And, of course, if she is justified in taking these images to be veridical, she is justified (at least initially) in believing that Walter^2 has severed his finger.[28]

Thus, I have accomplished my first task. I have established that there is a possible world in which my counterpart, Rebecca^2, is justified in believing that F is true. Next, I need to establish that Rebecca^2 is from my perspective a reliable witness with respect to the goings on around her. For if I can establish this, I can then base my belief in the possible truth of F on her belief in F. Luckily, this task presents little difficulty.

Two conditions must be met if I am to consider Rebecca^2 a reliable witness. First, she must have reasoned well given both her best explanation and her situation as she

[27] The fact that the images I called forth happen to possess the requisite degrees of force and vivacity makes the above argument suspiciously easy to make. But most everyone has had a daydream that was so real that its conclusion came as a surprise. This shows us that at least *in principle* our imagined images can be sufficiently forceful and vivacious to be considered veridical. And this *in principle* conclusion is enough for my purposes here. That is, the gentle reader might doubt that my images here were sufficiently forceful and vivacious. But this *in principle* conclusion will compel that same reader to acknowledge that images which possess the requisite degrees of these qualities do come to us via our intentional imagination and this reader can then run the above argument on those images.

[28] Initially, Rebecca^2 will be justified in her belief that F. Moments later, her justification might be undermined. For if Walter^2 did cut off his finger, she should have experiences of, for example, blood and profanity. But if Walter^2 didn't cut of his finger and hence she doesn't have these experiences of blood and profanity, she will as a consequence have good reason to doubt F. In other words, future experiences will either confirm or disconfirm her initial judgment. While this is true, this is of no concern here. While her judgment might in the near future be overturned, nothing about these future experiences will change the fact that initially her belief in the truth of F was justified. (Similarly, while in the end I concluded that there was no water on the road, initially I was justified in believing that I had seen water there.)

perceives it. Second, she must not be epistemically impaired. That is, Rebecca^2's intellectual abilities must not have been compromised either in general or with respect to the situation in question. Again, Rebecca^2 and I are for all intents and purposes epistemic twins. Consequently, I can't help but conclude that Rebecca^2 has reasoned well here. Similarly, I have no reason to think that Rebecca^2 was epistemically impaired, for I have no reason to think I was so impaired. But I have concluded that I have merely imagined Walter severing his finger. Doesn't this give me reason to think that, unbeknownst to Rebecca^2, she has imagined this as well? Don't I in other words have reason to think that she has hallucinated? The fact is that I know that Rebecca^2's images have come to her in some way through a pathway associated with her sensory faculties. Because I know this, I know that these images can't be the products of her wayward imagination.

So, from my perspective Rebecca^2 has satisfied the two conditions associated with being considered a reliable witness. From my perspective, she reasoned well and she suffered from no epistemic impairments. Thus, as far as I am concerned she is a reliable witness to the goings on around here. Hence, I can in this instance base my beliefs on hers. Thus, because Rebecca^2 is in my estimation a reliable witness and because she believes that F is the case, I am justified in believing that F is true in her world as well.

Some will object to this conclusion, arguing that more needs to be done in order to establish Rebecca^2's reliability. Beyond establishing that Rebecca^2 has reasoned well and that she suffers from no impairments, I have to establish that her beliefs are true before I rest my beliefs on hers. For her beliefs could all be false even though she satisfies these two requirements. But there is something quite odd about this objection. We depend on the proclamations of a witness exactly when we can't establish via independent means that p is true. But here the objector is demanding that in modal cases, we have to establish p's truth in a possible world in order to justify our reliance on a witness. But, of course, if we could do that, we would have no need for the witness in the first place. Thus, this objection is in the end just a backhanded way of excluding the use of witnesses when the proposition in question concerns possible worlds. But what justifies this exclusion?

Keep in mind that the two conditions defined above are exactly those conditions we place on witnesses to past events. It is enough to establish their reliability by establishing that they reasoned well and they weren't impaired. Moreover, past worlds and possible worlds are equally inaccessible. No time machine can take us to a past world to establish that p was true and no space ship can take us to a possible world to establish that p is possibly true. Thus, why allow for the use of witnesses to justify our beliefs about past worlds but not about possible worlds? I can think of no such reason.

It is also worth noting here that because Rebecca^2 and I are epistemic twins, our respective reliabilities stand or fall together. That is, if I have reason to doubt Rebecca^2's reliability as a witness, I equally have reason to doubt my reliability as a witness. And if I entertain the possibility that Rebecca^2's beliefs are all reasonable but false, I must also entertain the possibility that all of my beliefs are reasonable but false. Moreover, to dismiss this possibility, I will have to establish that I am somehow immune from skepticism. Now, I can't solve the problem of skepticism. But it also isn't reasonable to ask me to do so. This isn't my bailiwick.

Thus, if we concede that I don't have to solve the problem of skepticism and that my epistemic credibility is nonetheless intact, we have to concede that Rebecca^2 is equally credible. This means that Rebecca^2 is from my perspective a reliable witness with regard to the current goings on in her world. Thus, the fact that Rebecca^2 is justified in believing that Walter^2 has severed his finger justifies my belief that Walter^2 has hurt himself in this way. Hence, I am justified in believing that F is possibly true. Here then is an instance of my using the images I have called forth and the stories I can tell as a guide to possibility.

Each of us believes that the particulars of our immediate surroundings can vary in innumerable ways. And via the epistemological procedure modeled above, we can justify our beliefs about these possible variations. This is no mean feat. Most of the modal beliefs that suffuse our everyday lives concern just these sorts of possibilities. After badmouthing our boss, we might worry, thinking that she could have been just around the corner. While driving home, we might consider the possibility that a police car is hiding in the bushes we just sped past. My modal epistemology provides us with a way of justifying just these sorts of everyday modal beliefs

And, importantly, my modal epistemology, unlike Chalmers's, doesn't suffer from the problem of incompleteness. The story I told of Hot Pockets, dull knives, and distracting arguments plays a role in justifying my belief that F is possibly true. But it does so, not because it constitutes either a maximally consistent set of propositions or an assumed subset of such a larger set; if it did, the problem of incompleteness would arise again. Instead, this story provides me with the necessary justification because the fact that I can tell this story means that it is available to Rebecca^2. To review, this story (together with the qualities of the images before her mind's eye) justifies Rebecca^2 in taking these images to be veridical, which in turn justifies her belief that Walter^2 has cut off one of his fingers. And because Rebecca^2 is so justified, I am justified in believing that F is possibly true.

Note that explanationism does not require completeness in non-modal contexts. This theory recognizes that the stories we offer to justify our non-modal beliefs are incomplete, as are our best explanations. None of these stories or explanations, singly or together, constitutes a complete description of the actual world. Moreover, this theory also recognizes that these various incompletenesses might hide unsolvable problems. But, even so, inferences to our best explanation are still taken to justify our non-modal beliefs. In the same ways, incompleteness need not undermine our modal beliefs. Thus, the problem of incompleteness that plagues Chalmers's theory does not threaten mine.[29]

But though my theory avoids the problem of incompleteness, it does suffer from the charge commonly directed at modal epistemologies that depend on the

[29] Some might think that the images we call forth are mere prompts that compel us to tell a story and that it is this story that alone justifies our modal beliefs. But these images aren't mere prompts. My being justified in my belief that F is possibly true depends on Rebecca^2 taking the images that have come to her to be veridical. And she takes these images to be veridical, because she can tell a particular kind of story about them. Thus, again, it is images in combination with stories that does the justifying.

imagination: it too has a limited scope.[30] If we are interested even in just those possibilities that concern variations in the world beyond our immediate surroundings, this theory will have to be modified. Because of this, if this theory in its current form doesn't provide us with the necessary justification for our belief that a particular proposition is possible, we can't therefore conclude that that proposition describes an impossibility. It might instead describe a possibility that is beyond the scope of this theory. But while limited, this epistemology can still provide us with some insight into the debate about the nature of consciousness and the possibility of a world populated by zombies. So, let us now consider zombies.

Zombies

Again, Chalmers's best-known argument[31] against the claim that the mental logically supervenes on the physical turns on whether there is a logically possible world, physically identically to the actual world, in which there are no conscious experiences. If there is such a world, Chalmers argues, "facts about consciousness are further facts about our world, over and above the physical facts" (1996, 123). I have shown how Chalmers's modal rationalism is troubled. Thus, via this epistemology, Chalmers can't support his claim that Zombie World is possible. Now the question is, can modal empiricism support such a claim?

[30] While some may challenge my theory for its limited scope, others will argue that it allows impossibilities to be conceived and hence deemed possible. For example, it seems as if I can imagine Hesperus not being Phosphorus. The fact is that I justify many of my beliefs by what I learn from the TV. And I can imagine a reporter on the nightly news explaining to me that scientists have discovered an astronomical body that appears and disappears in the night sky over the Mediterranean every 1,000 years. I can then imagine an astronomer coming on the program and explaining that the last time this body appeared was during antiquity and that where it appeared back then was approximately where Venus would appear. Hesperus is not Venus, this scientist concludes; hence Hesperus is not Phosphorus. Given what I can imagine here and given the role TV plays in my and hence my twin's life, it seems as if Rebecca^2 is justified in believing that Hesperus is not Phosphorus. And, given my modal epistemology, this would then mean that I am seemingly justified in believing that it is possible that Hesperus is not Phosphorus. But, of course, this is an impossibility. So, here we have what would seem to be a counter-example to my theory.

But there is no counterexample here. There are two ways the above scenario can be construed. On one hand, if within the above scenario 'Hesperus' and 'Phosphorus' are to taken in their secondary intensions, to use Chalmers's apparatus, then the proposition "Hesperus is Phosphorus" is necessarily true. Now if Rebecca^2 and I are aware of this fact, then reason wouldn't allow us to take this imagined astronomical discovery to confirm the proposition that "Hesperus is not Phosphorus." For as we both know, this proposition describes an impossibility. Rather, reason would demand that we take this discovery to confirm the proposition that "At different times, people have used the term 'Hesperus' to designate something other than Venus." But such a conclusion does not challenge the viability of my theory. On the other hand, if in this scenario these terms are taken in their primary intensions (as it seems they should not be, in so far as the claim is made that Hesperus is not Venus), then there is no necessary truth at issue here such that this 'discovery' would allow us to confirm an impossibility. Thus, either way of taking this scenario poses no threat to my theory.

[31] As he points out in his (1999), the zombie argument is only one of several in chapter three of his (1996).

Let's begin by getting a bit clearer on the notion of a zombie. A zombie is, for Chalmers, a molecule-for-molecule replica of an actual person. Each is a causal/functional twin of its human counterpart. Thus, wave to my zombie twin (my '*Z-twin'*), ask her whether she is having a good day or the directions to the local pub, and she will react in precisely the same way I would. What she lacks is consciousness. The fact that my Z-twin is my causal/functional equivalent entails that there is a sense, albeit a 'deflationary' one, in which she *does* have consciousness: she is aware of her environment, processing "the same sort of information" as I do and reacting to it accordingly (1996, p.95). But yet there is nothing that it is like for my Z-twin to do these things or be in these states. Given this, for there to be Z-twins, the psychological aspects of the mind must be separable (at least logically) from the phenomenal aspects. The psychological aspects of the mind include all that is causally or explanatorily relevant to behavior. The phenomenal aspects include feelings and sensations, in short, qualia. With this distinction in mind, we can say then that our Z-twins share our psychology but lack our phenomenology.

Now, in so far as our Z-twins share our psychology, they share our beliefs, justificatory practices, and our experiences in so far as these are psychological in nature. But if this is the case, then for Chalmers, any Z-twins we have will also be our epistemic twins.

Let me explain. Chalmers is a functionalist with respect to our psychology. He thinks that our behavior and hence our beliefs can be fully accounted for via a functionalist theory of the mind. Thus, if a mental state affects our behavior or our beliefs, then this effect should be fully captured via the functional aspects of that mental state. For Chalmers, this is true not just of those mental states that seem most open to a functional analysis (viz. our propositional attitudes) but it is also true of those that include qualia. Chalmers's position is that if a qualia-laden mental state affects our behavior or beliefs, it is not in virtue of the qualia that this effect is produced. Rather, this effect is solely the consequence of its functional properties. The "intrinsic" qualities of an experience, Chalmers claims, play "no direct role in governing cognitive processes" (1996, p. 207).

So, on this view, facts about the phenomenal aspects of my Z-twin's mental life will be irrelevant to what she believes and to her justificatory practices.[32] All that will be relevant here will be her psychology, and her psychology is *my* psychology. But if this is the case, then, according to Chalmers, my Z-twin and I must share all of our first person epistemic properties, i.e. we must share all those first person accessible properties that are relevant to our beliefs and our justificatory practices. Thus, in so far as my psychology is my Z-twin's psychology, we two must be epistemic twins.

[32] The one hiccup here is with respect to second order beliefs we have about our qualitative experiences. I believe that my qualitative experiences have made me believe that today's sky is bluer than yesterday's. Can my Z-twin have the same belief about herself, if she is a zombie? Note she will endorse this belief both in her speech and in her actions. But yet she hasn't had these experiences so her words seemingly have no reference. How then can she have this belief? Chalmers recognizes this problem and has no settled view on its solution. I can do no better than Chalmers does here. So, I too will put this issue aside. See Chalmers (1996, p. 203).

Working then with Chalmers's notion of zombies and hence his philosophy of mind, let's now see whether via modal empiricism I can justify the belief that proposition Z

(Z) There is a world populated by our zombie twins

is possibly true.[33] For this belief to be justified via this epistemology, I must imagine something with particular verve, and hence forceful and vivacious images must come before my counterpart's mind's eye. (To keep our examples straight, let's refer to my counterpart here as *Rebecca*^{3}.) Rebecca^3's best explanation in combination with these images must then justify her belief that her world is one populated by zombies. And, if Rebecca^3 is so justified, I then am justified in believing in the possibility of Zombie World.[34]

Of course, such an argument will work only if I can establish that Rebecca^3 is in my estimation a reliable witness. But as was the case earlier, this poses no difficulty. The question at issue here is whether Rebecca^3's world is Zombie World. If it is, then Rebecca^3 would also be a zombie. She would be my Z-twin. Of course, at this point in the argument, we can't assume that Rebecca^3 is my Z-twin. Nor can we assume that she isn't. Either assumption would prejudice the debate. But no matter which way this debate is resolved, as I have established above, Rebecca^3 will at least be my epistemic twin, which means I can't help but consider her to be reliable.

Given this, what then would Rebecca^3 say about proposition Z? To answer this question, let us, for simplicity's sake, expand on the finger example. By the images and arguments I offered above, I can establish that Rebecca^3 would be justified in believing that Walter's counterpart in this world has cut off his finger. (Again, for simplicity's sake let's refer to this counterpart as *Walter*^{3}). But what other beliefs might she form here? Would she be justified in believing that Walter^3 feels and experiences nothing, no pain, no terror, as this culinary nightmare unfolds? Would she be justified in believing that Walter^3 is a zombie?

And here is the important result. Recall that, as my epistemic twin, Rebecca^3 shares all of my first person epistemic properties. I know that others around me possess qualia. This means that Rebecca^3 knows the same thing and since a known

[33] Chalmers at times seeks to establish Z but at other times he seeks merely to establish that there is a possible world in which his counterpart is a zombie. As we shall see below, this difference does not affect my argument. See footnote 38.

[34] This talk above of images with 'verve' might make some question the applicability of modal empiricism to the problem of zombies. For whether modal empiricism can justify my belief in the possibility of Z depends in part on whether Rebecca^3 can have a set of forceful and vivacious images appear to her. But if Rebecca^3's world is Zombie World, then she is a zombie. Zombies don't in the canonical sense have images come to them, let alone images that have or lack the qualities of force or vivacity. How then could this epistemology apply to this problem?

In answer to this, suppose I and hence Rebecca^3 'see' an 'image' of a dagger hovering above the ground. To avoid begging the question, I can't say whether this image is available to Rebecca^3 qua phenomenal features. But even so, because Rebecca^3 is my epistemic twin, I can conclude that this image is available to her qua psychological features. And this is sufficient given my purposes here. For according to Chalmers it is these psychological features that are alone necessary to account for why Rebecca^3 and I believe what we do. And, given modal empiricism, whether or not I am justified in holding a particular modal belief depends solely on what Rebecca^3 is justified in believing. Thus, modal empiricism is at least in principle applicable to this problem.

proposition must, trivially, be true, Walter[3] is not a zombie and Rebecca[3] is not in Zombie World.

Perhaps this is too strong. While we are at least pre-theoretically inclined to make knowledge claims about the inner lives of others, the problem of other minds might require that we retract such claims. But even given this, our best explanation does justify our beliefs in the minds of others.[35] Specifically, if I ignored the fact that I willed my self to have these images, these images (which include images of Walter's reactions as the knife cuts through his flesh) in combination with my best explanation would together justify my belief that Walter was in pain at that moment and, more importantly, that Walter is the kind of creature that experiences pain. But if I am so justified, Rebecca[3] is justified in forming similar sorts of beliefs about Walter[3]. For, again, we two are epistemic twins. Thus, the various images that have come before Rebecca[3]'s mind's eye and the stories she could tell about them don't justify the belief that Walter[3] is a zombie. Rather, they justify her belief that he isn't one, thereby prohibiting her from believing that she lives in Zombie World.

Chalmers can offer no objections here. For he himself holds that our best explanation licenses our belief in qualia-soaked other minds. Specifically, he holds that this belief is justified because failure to hold it would violate the plausibility condition that constrains theory-building. Thus, he considers the principle which states that the reports of others concerning their own conscious states are typically veridical. And he argues that we have adopted this principle not because we know a priori that others have such states or are trustworthy guides to them, but simply because such a principle "is antecedently much more plausible than the alternative" (1996, p. 217). In explanationist terms, attributing qualia to others is part of our best explanation of the events of the world, particularly the behavior of animals. *Why* did Walter howl? Well, because he experienced pain, and pain, *qua* phenomenal state, is unpleasant.[36]

So: if I justifiably believe that others in our world have qualia, then, in any world I can non-question-beggingly describe, my epistemic twin justifiably believes that others in her world have qualia. And, given modal empiricism, I am then justified in believing the same thing about this twin's world. That is, I am justified in believing that those who populate this possible world possess qualia. But, of course, if I believe this, I don't yet have the necessary justification for believing Z to be possibly

[35] 'Other minds' here refers to beings who possess a phenomenology, not merely a psychology.

[36] Yablo has made a superficially similar point in the course of making a very different point. Yablo argues that Chalmers's view has the unfortunate consequence that our divergent modal intuitions about, say, the existence of pain in a given world, means that "we wind up meaning different things by 'there is pain'" (Yablo 1999b, p.13). That is, we must ask "what it makes sense to say" were we plopped down in a given world, and what makes sense will depend on our (potentially quite different) methodological and theoretical commitments. Yablo asks, "What is the best explanation of the fact that there is weeping and gnashing of teeth? That the weepers are *in pain*, or that they are in such and such brain states and feel nothing?" (ibid.) The requirement for consistency with our best explanation called for here resonates with what I have argued for above, and to that extent, Yablo and I are on the same page. But clearly this comment is made in the course of his larger argument about meaning, in particular, the disastrous similarities between modal rationalism and some versions of logical empiricism.

true. None of this means, of course, that zombies are impossible. What it means is that this modal epistemology doesn't license our belief in the possibility of zombies, and hence an argument for dualism will have to proceed along different lines.

What is more, resisting this line of reasoning will have a very high cost. Let's allow (as we should not) the pro-Chalmers zombie partisan simply to stipulate that creatures in Rebecca^3's world lack phenomenal states *and* that Rebecca^3 is justified in believing this. Epistemic twinship goes both ways. Thus, like Rebecca^3, I would possess the same justified beliefs. I would believe of Walter and every other living being that they too lacked phenomenal states. Thus, this zombie partisan has signed on for an especially nasty version of the problem of other minds, for she cannot even remain agnostic about their existence in her own world. She must in fact conclude that everyone, every creature, be it big or small (except perhaps herself), is a zombie.

At this point, Chalmers might charge me with forgetting a key feature of the problem of other minds. On his view, it is by extrapolating from the first-person case that we attribute consciousness to others. "We note the regularities between experience and physical or functional states in our own case, postulate simple and homogenous underlying laws to explain them, and use those laws to infer the existence of consciousness in others." (1996, p. 246). Thus, if Rebecca^3's world is indeed Zombie World, then it seems she herself lacks the introspective evidence with which to begin. But, clearly, this response begs the question: sure, *if* Rebecca^3 is in Zombie World and hence is herself a zombie, then there's something very odd going on when she attributes consciousness to others. But the antecedent presupposes what was to be proved.

Moreover, this appeal to introspection can't do the work it needs to do here. Assuming Rebecca^3 is a zombie, by definition she lacks qualitative experiences. But if she is also my epistemic twin, then introspection won't reveal to Rebecca^3 her true zombie nature. Because nothing, neither introspection nor extrospection, has given me reason to think that I am a zombie, Rebecca^3 will possess no such reason to think herself a zombie, even if in fact she is one. As Chalmers describes it, zombie-hood isn't something that can be discovered from a first person perspective. Thus, Rebecca^3 will be convinced that she isn't a zombie, and using the same best explanation that I employ, she will be similarly justified in believing that the creatures around her are conscious.[37]

It is worth pausing to contrast Chalmers-style zombies with movie-zombies. As Chalmers notes, it would be very difficult to make a movie about his zombies, since they behave just as their qualia-ridden human counterparts do (1996, p. 95). There would be no way for the filmmakers to depict *any* kind of difference between them and ordinary humans. And this is the point I have been driving at: whatever

[37] Sydney Shoemaker has made the same point with regard to his zombie twin's judgments about his own phenomenal states. When his zombie twin makes these judgments, "[he] does not display any failure of rationality. There is nothing anyone could point out to him that should convince him that he should repress these judgments—nor is it in his power to do so. Insofar as the notions of justification and evidence are normative ones, notions having to do with what it is reasonable or rational for a creature to do or judge, it seems there could be no difference between their application to the zombie and their application to one of us" (1999, p.442).

experiential evidence we imagine Rebecca[3] to have, none of it will give the slightest support to a denial of qualia to others. Indeed, just the opposite is true: insofar as Rebecca[3] is my epistemic twin, Rebecca[3] *must* judge that others have phenomenal states.[38]

By contrast, the lumbering, George Romero-style zombie is imagined easily enough. I can imagine Walter turning from the peppers, extending his arms like a sleepwalker and groaning as if he were suffering from a severe stomach virus. Suppose, again, that these images came to Rebecca[3] without her conscious will being involved. What would she justifiably believe about Walter[3]'s mental life now? Rebecca[3] would not conclude that Walter[3] lacked a consciousness but only that something drastic had changed with respect to what it was like to be Walter[3]. In an aside, Chalmers, concurring with Block, says of these Hollywood zombies that "it is reasonable to suppose that there is something it tastes like when they eat their victims" (1996, p. 95). Why does he find this reasonable? For all the same reasons that we attribute qualia to ordinary humans, of course. We can infer that brains and intestines taste good to these zombies simply because they pursue these treats with such resolve.

We can conclude this section by entertaining an objection to my overall strategy. I worry that Chalmers's conviction that Zombie World is conceivable merely reflects his own dualistic prejudices. But might the same be said of me? What I find conceivable, the objection runs, is conditioned by my antecedent beliefs. Thus, it is only because I am opposed to property dualism that my epistemic twin fails to judge that the people around her lack phenomenal states.

While this objection may seem like a strawman, it is worth entertaining because it brings out the independence of my argument from any commitment to materialism. If we reject solipsism and hold that by some method or other we are justified in our belief that those around us have rich, qualia-filled, mental lives, then our epistemic twins will believe the same thing. Hence, we can't base our belief in the possibility of Zombie World on the beliefs of our epistemic twins. For they (like us) will believe of their compatriots that they have similarly rich mental lives. And this will be true, regardless of which metaphysics of mind we and hence our epistemic twins happen to hold. That is, regardless of whether or not we are dualists or materialists, *if we reject solipsism*, modal empiricism will not license the belief in the possibility of zombies.[39]

[38] Some might argue that Chalmers need not establish that there is a possible world populated solely by our Zombie Twins, i.e. *Z*. He need only establish that there is one creature who exists in some possible world that shares our psychology but lacks our phenomenology. Now, if this is the case, the mere fact that Rebecca[3] isn't justified in believing that Walter[3] is a zombie need not trouble Chalmers in any way at all for clearly there are other creatures to consider. In response to this objection, note that as long as the creature in question shares our psychology, Rebecca[3] will be precluded from concluding that s/he is a zombie. Instead her best explanation will demand that she deem that creature conscious. So, while Rebecca[3]'s conclusion concerning Walter[3] may not trouble Chalmers, the fact that she will draw a similar conclusion with respect to all those creatures who possess our psychology should.

[39] For more on this last point, see Hanrahan (2008).

Conclusion

Via modal rationalism, we can't justifiably conclude that the proposition

(Z) There is a world populated by our zombie twins

is possibly true. This is due to the fact that modal rationalism doesn't in any sense provide us with a real or trustworthy guide to possibility. Say modal rationalism merely demands the *prima facie* conceivability of the proposition in question. Then any conclusion we draw about that proposition's modal status will always be suspect. We won't ever be able to overcome the suspicion that this conclusion is nothing more than a reflection of our prejudices. And this means, of course, that we can't trust the reports of this modal epistemology. Say instead modal rationalism demands the ideal conceivability of that proposition. Then we could never satisfy the requirements associated with concluding that a proposition was conceivable. And this means that modal rationalism won't have provided us with any kind of real guide to possibility. Thus, modal rationalism can't justify any of our modal beliefs, let alone our belief that Z is possibly true.

Via modal empiricism, we also can't justifiably conclude that Z is possibly true. But this doesn't mean that modal empiricism can't justify some of our modal beliefs. Unlike Chalmers, I have given a substantive mechanism for investigating some of our modal claims. We just aren't by this method at this time justified in believing in Z's possibility. Our failure to be justified here doesn't necessarily indicate a general flaw in this modal epistemology. And we shouldn't assume that it does. We shouldn't assume that Z is possible and reject as inadequate any modal epistemology that fails to justify our belief in Z's possibility.

Within philosophy, we develop, evaluate and modify theories (be they modal or non-modal) often via a process of reflective equilibrium. We construct a theory so to account for our pre-theoretical intuitions about the topic at hand. But seldom if ever does that theory account for all of our intuitions. So, we either modify the theory to capture more of our intuitions or we reject the recalcitrant intuitions that seem uncapturable. Of course, the crucial move in this process involves separating those intuitions around which we will define our theory from those which we will reject.

I contend that Chalmers's intuition that there could be a world populated by our zombie twins should not be one those intuitions around which we construct our modal epistemology. And no one should object for the debate that has surround this intuition is reason enough to consider it an open question whether a Zombie World is a possible world. Thus, on one hand, no modal epistemology, including mine, should be judged inadequate due to the fact that it can't support this intuition, nor should such a theory be deemed adequate for the same reason. But, on the other hand, if no viable modal epistemology can account for the possibility of a Zombie World, *and this has yet to be established*, we then would have reason to reject the possibility of such a world.

Acknowledgements I would like to thank Walter Ott for his help with every aspect of this paper and William Lycan for his insightful comments.

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