Against advanced modalizing*

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April 16, 2007

Abstract

I discuss a problem for modal realism raised by John Divers and others. I argue that the problem is real enough but that Divers' "advanced modalising" solution is inadquate. The problem can only be solved by 1) holding that modal realism is only contingently true, 2) embracing a kind of Meinongianism about ontological commitment, or 3) abandoning the project of "analysing modality".

1 The modal status of modal realism

Suppose that modal realism is necessarily true. By modal realism, I mean the thesis that there is a plurality of worlds, that those worlds are isolated spacetimes just as real as our own, that the worlds satisfy some principle of recombination, that some worlds have as parts blue swans, talking donkeys, etc. Roughly, modal realism is the content of David Lewis's book *On the plurality of worlds*.

It is a logical consequence of modal realism that there are blue swans. After all, if there is some world that has a blue swan as a part, then there are blue swans. Abbreviating the thesis that there are blue swans "*Swans*", and the thesis of modal realism "*PW*", we may say *Swans* is a logical consequence of *PW*. Since that is the case, we should also say the material conditional "if *PW* then *Swans*" is

*Special thanks to Dan Marshall, discussions with whom prompted me to write this paper. A number of the ideas of this paper are derived from that discussion, and it is now hard to recall who came up with what. Thanks also to Ben Caplan, Dana Goswick, Hud Hudson, Ed Mares, my colleagues and students at the University of Otago, and the members of the UC Davis philosophy department modality reading group.

necessarily true. But, then, since *PW* is necessarily true, *Swans* is necessarily true.

But then it follows that necessarily there are blue swans! And that is absurd. Surely the modal realist's view should be that blue swans are contingent existents — they exist in some worlds and not in others.

Let's look at the argument in more detail. My point is that the following set of propositions is inconsistent (here I use $\Box$ to abbreviate "it is necessary that"):

1.1 *PW* logically entails *Swans*

1.2 (the N rule) from "p logically entails q" you may infer $\Box(p \supset q)$

1.3 (the K rule) from $\Box p, \Box(p \supset q)$ you may infer $\Box q$

1.4 $\Box$*PW*

1.5 $\neg\Box$*Swans*

There is a problem here. Modal realists have shown signs of believing all five of these. But the five are inconsistent. It is open to the modal realist to reject members of this inconsistent set — and which ones they choose will make a difference to what their theory says.[1]

Before I turn to surveying ways of rejecting premises, let me say a bit about what signs there are modal realists endorse them.

That *PW* logically entails *Swans*. Modal realism is not just a theory about the truth conditions of modal vocabulary. It is also a theory about what possible worlds there are, and what they are like. Roughly put, the modal realist wants to say that "*every* way a world could possibly be, that way some world *is*" (Lewis 1986, p. 2, 86). That is a rough way of putting it, because when combined with a possible worlds analysis of modality, it will turn out to be trivial. What the modal realist means by saying this kind of thing, though, is that insofar as we think there might have been blue swans, we should think of "there is a world containing blue swans" as part of the theory of modal realism. Since "there is a world containing blue swans" entails *Swans*, modal realism entails *Swans*.

[1]This type of problem for modal realism was first pointed out to me by Dan Marshall, and is discussed in his unpublished paper "A puzzle for Genuine Modal Realism" . Though Marshall's argument, when I saw it, was different in structure from my own (for example, it makes a particular analysis of modality a premise, and depends on the idea that analyses give rise to necessary biconditionals) I believe that he is pointing to another aspect of the problem I am describing here.

The other way in which modal realists say things as part of their theory that commit them to theses like *Swans* is via principles of recombination. (Lewis 1986, p. 87–92) (Divers 2002, p. 100–103) These are intended to, in a non-trivial, non-modal way, specify at least a lower limit to the number and nature of worlds. They are difficult to state exactly, but the intention is that they should entail the existence of all the worlds needed to make sense of the commonest assertions of possibility. Take a swan and dress it in the feathers of a peacock. Principles of recombination entail that there is such a creature somewhere among the possible worlds.

You might complain that, insofar as (1.1) is true, it's unfair to describe *PW* as "modal realism". *PW* is a comprehensive theory of modality; perhaps "modal realism" would be better used to mean just one plank of that theory, the view that possible worlds are isolated spacetimes just as real as our own — a thesis about the nature of possible worlds is, rather than a thesis about what's possible. In that sense "modal realism" would be compatible with the thesis that there are no blue swans (not even in any other possible world). I have no argument against modal realism, in that sense.[2] My thesis is there is a contradiction in the large bundle of theses that philosophers associate with modal realism (whether it is fair to call this bundle "modal realism" or not — it is surely fair to call it "*PW*"), and that Divers' Advanced Modalising does not succeed in removing that contradiction.

The validity of the N rule and the K rule. These are inference rules that may be fairly regarded as among the most central to ordinary patterns of modal inference. They are, for example, valid in all "normal" modal logics. Though they are not explicitly part of modal realism (which is, after all, a metaphysical, rather than a logical theory) I think it would be bad if modal realism entailed that they must be rejected.

The charge of violating "laws of modal logic" is one that has often been raised against modal realism; never, I think, convincingly. Most of these charges have exploited odd corners of modal logic that are connected with its more metaphysical aspects. Thus, for example, there are objections having to do with violations of the S4, S5, B, or E axioms of modal logic; objections having to do with the nature of quantification into modal contexts, such as the validity or invalidity of the Barcan Formula and its converse; objections having to do with non-standard and controversial extensions to modal logic, such as the logic of actuality.[3] All

[2]Indeed, as an anonymous referee pointed out to me, the argument of this paper could be used to defend an alternative comprehensive theory of modality in a modal realist spirit. It could for example be used to defend the "modal noneism" discussed in section 4, or Divers' (2004, 2006) agnosticism about possible worlds, both of which are versions of "modal realism" in the sense under consideration in this paragraph.

[3]For a survey of objections to modal realism based on the question of whether it sustains certain

of these should be "spoils to the victor" — hostages to a correct metaphysical account of modality.

Another way of making this last point is to say, again, that modal realism is not a theory about modal logic. Many of the aspects of modal logic in question are artifacts of the logical machinery which do not have anything to correspond to them in ordinary modal language. For example, how one feels about the intuitive plausibility of principles concerning interactions between quantifiers and modal operators can vary depending on how the modal operators are "read" in ordinary language. For example, if you read the atomic formula $\Box Fx$ as "x couldn't have failed to be F", you'll look with less favour on the Barcan formula, $(\forall x)(\Box Fx) \rightarrow \Box(\forall x)(Fx)$ and with more favour on its converse than if you read that formula as "it is necessarily the case that x is F". The modal realist does not need modal logic — they can paraphrase ordinary language directly into possible world talk, and avoid debates about the validity of the Barcan Formula and its friends. As Lewis says: "What is the correct counterpart theoretic interpretation of the modal formulas of... quantified modal logic? — Who cares? We can make them mean whatever we like... We needn't be faithful to the meanings we learned at mother's knee — because we didn't." (Lewis 1986, p. 12).

In short, "wolf!" has been cried many times over modal realism's adherence to modal inference patterns. My appeal to the N and K rules is different. First, I have in mind not principles of modal logic, but inference patterns in ordinary language. From "p entails q" one may validly infer "It is necessarily true that either q or not p"; from "p is necessarily true" and "It is necessarily true that either q or not p", one may validly infer "q is necessarily true". Second, these are not controversial matters of iterated modality; they correspond to rules valid in every normal modal logic. Third, these are not controversial matters of quantification in or out, they are strictly *de dicto*. Fourth, these are not controversial matters of extensions to the well understood core of modality, of talk of actuality, or of conditionals. Everything I am saying in this paper applies only to modal realism as a theory of Quine's "first grade of modal involvement" — a theory of necessity and possibility as properties of sentences. Here, the logic is simple indeed.

theorems of standard quantified modal logic (QML) such as S4, S5, B, and Barcan formulas, see Divers (2002, pp. 142–144). For an objection to modal realism based on the logic of actuality, see Fara and Williamson (2005). Fara and Williamson would no doubt insist that the logical features of actuality that they complain modal realism and counterpart theory cannot sustain are as basic and uncontroversial as my examples of the N, K, T, and distribution rules. What is controversial about the logic of actuality though, is whether "actually" should be thought of as a modal operator, rather than a mechanism for disambiguating the relative scopes of modal operators and predicates. Though Fara and Williamson point to ordinary language usages that cannot be represented in QML without such an operator, there are other ways of extending QML — for example by adding first order plural (FPO) quantifiers — that would suffice to represent these usages.

That *PW* is necessary. It seems obvious to many people that *PW* should be, if true, necessary. It does not seem so obvious to me. My favoured solution to the problem is to deny this premise. But this is not without costs.

Much of the attachment to the idea that *PW* must be necessary if true seems to be connected with some idea that metaphysical theories must be metaphysically necessary. But why should this be? Perhaps the idea is that just as physics discovers laws that are physically necessary, so metaphysics should discover laws that are metaphysically necessary. This is a poor analogy. "Physically necessary" just means "compatible with the laws of physics". But "metaphysically necessary" does not just mean "compatible with the laws of metaphysics". Perhaps the idea is that because *PW* is a theory about different "strengths" of truth, it should assign itself the strongest kind of truth available. This is an attractive idea, but it is a good question whether this is actually a consequence of the modal realist's analysis of modality. I address this question in the next section, and conclude that it is not. I doubt that there is any good reason to hold that *PW* is necessary if true; but many metaphysicians of modality I've spoken to seem to be motivated by these considerations. For them, denying this premise would be a cost.

Another reason for thinking that *PW* is, if true, necessary is connected with epistemic objections to the theory. Faced with the challenge to show that we should use pragmatic criteria to decide ontological questions, Lewis gave an analogy with the ontology of mathematics. Faced then with the objection that sets and numbers are abstract, but possible worlds are concrete, he replied that the distinction between abstracta and concreta is obscure, but that, in contrast, there is a clear point of analogy between possible worlds and mathematical entities — both exist necessarily. "Modal and mathematical knowledge together fall on the right side of the line. Our *contingent* knowledge that there are donkeys at *our* world requires causal acquaintance with the donkeys... Our *necessary* knowledge that there are donkeys at *some* worlds... does not." (Lewis 1986, p. 112) I read this as saying that consequences of *PW* itself — that there are donkeys at some world — are necessary.

I think that this was a moment of weakness on Lewis's part. Nowhere else does he make such definitive statements on the modal status of his theory of modality. However, without this move, his reply to the epistemic objection to modal realism is somewhat blunted. I leave it to the reader to decide how severe a problem for modal realism that is.

That it is not necessarily true that there are blue swans. I take it that modal common sense is firmly behind this premise.

However, modal realists are not afraid of denying common sense. Many modal realists (or their fellow travelers) will think that, in some subtle way, this is the

premise to deny. That might be one way of understanding John Divers' doctrine of advanced modalizing, which I discuss in a later section. My objections to that are too complex to preview here.

Instead, I will give a reason for thinking that modal realists should accept this premise. Recall the principles of recombination discussed above. These are part of *PW* and should entail that if there is a world that contains a blue swan, then there is a world that does not contain one. The modal realist's analysis of modality should make that sufficient for "there is a blue swan" being contingent. I say "should" rather than "does" because the exact details of this analysis are part of the problem. In the next section I tackle the difficulties of formulating such an analysis.

2 The analysis of modality

Another way of posing the problem I am discussing is to ask for a detailed statement of the modal realist's analysis of modality. If we had such a statement, we could use it to analyse the modal sentence "*PW* is necessarily true", and see whether what we get is a truth according to the modal realist.

The task of stating the analysis is complicated in two ways. First, the "modal realist analysis of modality" is a vastly complicated affair — a research programme being worked on by metaphysicians, linguists, and philosophers of language giving possible worlds treatments of the many and complicated modal idioms of ordinary language. Fortunately for us, a very much cut down corner of this programme will suffice. All we need is the modal realist's analysis of the first grade of modal involvement, of necessity and possibility construed as predicates of non-modalised sentences. From here on, that is what I will mean by an "analysis of modality".

Second, it is already well known that the most obvious and simple analyses of modality have serious problems when turned on the subject matter of modal realism itself. Take, for example, this, the *simple analysis of modality*:

> $\ulcorner S \urcorner$ is possibly-true iff for some world w, $[S]^w$ (where $[S]^w$ is the result of restricting all quantifiers contained in S to parts of w).[4]

[4]As I emphasised earlier, all the problems I am describing here can arise with an extremely logically restrained version of modality — one in which the only modal vocabulary consists of predicates of non-modalized sentences. For that reason my modal operators are written "is necessarily-true". The hyphen emphasises that this predicate should not be imagined to be the result of applying a modal operator "necessarily" to the predicate "is true". I use corner quotes to

$\ulcorner S \urcorner$ is necessarily-true iff for every world w, $[S]^w$.

Suppose we apply this analysis to ask about the modal status of the sentence "there are at least two possible worlds". Given the isolation of possible worlds that is part of *PW*, this turns out to be impossible! In fact, on this analysis, it is necessary that that there is precisely one possible world.

One might hope that some, more complicated, analysis would not have this problem. There are two ways to proceed here. You could start making up analyses by trial and error. A far more rewarding procedure, however, is to lay down some criteria for a successful analysis, and use logical means to determine whether those criteria are jointly satisfiable. One would like at least these three criteria:

2.1 That the analysis be compatible with the simple and literal truth of *PW* and its consequences.

2.2 That the analysis be compatible with validity of basic patterns of ordinary modal inference (such as the N and K rules).

2.3 That the analysis, in conjunction with *PW*, be compatible with modal common sense.

The simple analysis fails to satisfy (2.1) and (2.2) together. Consider a modal realist who was prepared to bite the bullet and hold that *PW* is necessarily-false (as the simple analysis reports) but also simply true. This isn't totally crazy.[5] After all, *PW* isn't about what happens at just one world. It has a modal status that transcends mere necessity — if a neat way to mark that status is as "impossible but true" then so be it. Nor is this position contradictory. It only becomes contradictory if the modal realist who holds it accepts that validity of the T rule: from *p* you may infer "possibly *p*". And that's the problem — like the N and K rules, T is an obviously valid pattern of ordinary modal inference.

There is an analysis of modality that satisfies all three of the above criteria. For lack of a better name, I'll call it the *T-preserving analysis*. It also preserves N and K:

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show that, on the left hand side of the biconditional, *S* is functioning as a name for a sentence. On the right hand side, where it is not in corner quotes, the sentence itself is to be substituted in for *S*. The operation represented by square brackets and a superscript term, as in "$[S]^w$", is a syntactic transformation on sentences which has the effect of restricting quantifiers. This notation is adapted from Lewis (1968).

[5] Noonan (1994) and Hudson (1997) both recommend a view like this to the modal realist.

$\ulcorner S \urcorner$ is possibly-true iff S, or for some world w, $[S]^w$.

$\ulcorner S \urcorner$ is necessarily-true iff S, and for every world w, $[S]^w$.

As far as the analysis of possibility and necessity goes, this is equivalent to taking the whole pluriverse to be an extra, large world of many island universes. A very similar approach would to be combine the simple analysis with revisions to *PW* that allowed the pluriverse (or perhaps any fusion of worlds) to count as a world, thereby abandoning the isolation of worlds. That, however, would lead to a problem which my proposed analysis of modality does not. To a modal realist, "the actual world" means "the world we are in". But on the revised version of *PW* where the pluriverse is a world, we are in two worlds, the actual Lewis-world, and the pluriverse. On the revised version of *PW* where every fusion of worlds is a world, we are in infinitely many worlds. Which is the actual one? In some of these worlds there are blue swans. Are they actual?[6]

The T-preserving analysis does not have this problem because it does not revise the internals of modal realism (by counting different things as worlds from what modal realism would count as a world) but only the treatment of "possibly-true" and "necessarily-true". I don't think that this analysis has much to intuitively recommend it. Its advantage is not that it makes particular sense or coheres better with the underlying metaphysics than the simple analysis. It's just that it's the only way to get *PW* to be true compatibly with those three criteria.

It has the consequence (in conjunction with *PW* itself, of course) that *PW* is possibly-true. But when the quantifiers contained in a statement of *PW* are restricted to a single world, the result of that restriction will be false. So the denial of *PW* is also possibly-true on this analysis. *PW* is contingent.

Not everyone will like that. Is there a way to get an analysis of modality that would render *PW* necessarily-true — to satisfy criterion (2.4)?

2.4 That the analysis be compatible with the necessary truth of *PW*.

No analysis can satisfy (2.4) while also satisfying (2.2) and (2.3). That is what my argument of the previous section showed. For any analysis that made *PW* out to be necessarily-true would either violate (2.2) by omitting to validate the N and K rules, or violate (2.3) by making "there are blue swans" necessarily true. Contingent truth is the best that the modal realist can consistently hope for.

[6]On this worlds-within-worlds variant of modal realism, and especially on the problem about actuality, see Yagisawa (1992), Bricker (2001), Divers (2002, pp. 103–105), and Parsons (2007).

3 Against advanced modalizing

The problems mentioned in the previous section, of turning the modal realist's analysis of modality on modal realism itself, are not new. It has been widely supposed, however, that some complicated revision to the analysis of modality will save the day, delivering the result that *PW* is necessarily true. I think I have already shown, in general terms, that that is not possible. However, such a general argument might not seem very compelling when held up against a detailed account of a revision to the analysis that claims to do this. A good way for me to show the force of my argument is to apply it to a worked out sophisticated analysis of modality that is intended to be compatible with the necessary truth of *PW*. Such an analysis is John Divers' (1999) (2002, pp. 47–50) theory of *advanced modalizing*.

According to Divers, the correct analysis of de dicto modality comes in two cases. In the *ordinary* case, we should use the simple analysis already mentioned:

> $\ulcorner S \urcorner$ is possibly-true iff for some world w, $[S]^w$.
>
> $\ulcorner S \urcorner$ is necessarily-true iff for each world w, $[S]^w$.

In the *extra-ordinary*, or *advanced*, case — where we apply modal language to the subject matter of modal realism itself — we should use a *redundancy analysis*:

> $\ulcorner S \urcorner$ is possibly-true iff S
>
> $\ulcorner S \urcorner$ is necessarily-true iff S

The idea is that when we ask "is it necessary that there be blue swans?", we are engaging in ordinary modalizing, and it gets the former analysis; when we ask "is it necessary that there be a plurality of worlds", that is advanced modalizing, and it gets the latter.

Talk of "cases" here papers over an important distinction. There are two ways we might understand Divers' proposal. On the first of these, the *ambiguity* view, Divers is saying that there are really two senses of possibility. One of these sense is correctly analysed by the ordinary analysis, and the other of them is correctly analysed by the redundancy analysis.

The second way of understanding Divers is the *disjunctive* view. According to it, the correct analysis of first grade modality is neither of those given above, but something like this, the *disjunctive analysis of modality*:

> $\ulcorner S \urcorner$ is possibly-true iff either a) $\ulcorner S \urcorner$ contains some vocabulary relating to worlds, sets, properties, propositions, or other predicates of modal realist metaphysics[7] and S or b) $\ulcorner S \urcorner$ contains no such vocabulary, and there is some world w, such that $[S]^w$.
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> $\ulcorner S \urcorner$ is necessarily-true iff either a) $\ulcorner S \urcorner$ contains some vocabulary relating to worlds, sets, properties, propositions, or other predicates of modal realist metaphysics and S or b) $\ulcorner S \urcorner$ contains no such vocabulary, and for each world w, $[S]^w$.

The difference between these two might be illustrated by comparison with other examples of ambiguity and disjunctiveness. The word "bank" is *ambiguous* — it has two independent senses, one having to do with rivers, the other with finance. Competent users of the word "bank" always intend one or the other. The word "jade" by contrast is implicitly *disjunctive*. This is the harder notion to nail down, but the idea is that, in some sense, the correct analysis of "jade" goes by cases. A thing is jade iff it is jadeite *or* nephrite. A competent user of "jade" need not know this, and even if she does, need not intend to mean one or the other (in fact, it would be contrary to Grice's maxim of informativeness to so intend). The ambiguity view of advanced modalizing holds that "is necessarily-true" is like "is a bank"; the disjunctive view holds that it is more like "is jade". It's not clear to me from Divers' writing which of these he meant. Unfortunately neither will work.

One drawback of the ambiguity view is that it is vulnerable to empirical refutation. It is obvious to anyone competent with both senses of "bank" that the word is ambiguous. By contrast, competent users of "is necessarily-true" do not hear the phrase as ambiguous (or at least, not ambiguous between an ordinary and advanced sense), even if they are disposed to believe that *PW* is necessary if true.[8] It

[7] Sets, properties, and propositions are included on this list because, according to Lewis, these are objects that do not exist wholly in any one possible world. As Divers points out, the same kind of problems we are discussing here arise for "It is possible that there be natural properties" — this sentence turns out to be false on an ordinary analysis of "it is possible that", and true on an advanced one.

[8] There are a number of well-known linguistic tests for ambiguity, including the *conjunction reduction* test. If "John works at a bank" and "Jane works at a bank" are both true, and "bank" in both cases applies to financial institutions, then competent speakers will find it appropriate to infer "John and Jane both work at banks". But if the sentences are true because John works at a financial institution and Jane works at the side of a river, then competent speakers find it *inappropriate* to say "John and Jane both work at banks".

We might apply this test to "It is necessarily true both that all bachelors are unmarried and that there are at least two possible worlds". If the ambiguity view were right, speakers competent with "necessarily true" who believe *PW* would find this type of thing inappropriate, as it equivocates

took the discovery of the failings of the ordinary analysis, and Divers' own treatment of advanced modalizing to discover the difference between these senses. That was not a discovery of an ambiguity in the meaning of "is necessarily-true" — at best, it was a discovery of the need for one. Philosophers cannot wish linguistic phenomena into existence.

What philosophers (like anyone) can do is create ambiguity in their own idiolects, by introducing new words that are spelled and pronounced like old ones. A fan of advanced modalizing could make "is necessarily-true" ambiguous for themselves and their conversational partners by introducing a new and hitherto unknown meaning for that term. But this would not solve any problems connected with the old meaning. For we would still use the simple analysis to analyse the ordinary sense of the modal idioms. As we have seen, the simple analysis is incompatible with criteria (2.1) and (2.2), because on the simple analysis "there are at least two possible worlds" comes out necessarily-false. That is, if *PW* is true, then ordinary modalizing invalidates the T rule — "there are at least two possible worlds" is both true and (ordinarily) necessarily false! To say that there is some other, technical, extraordinary, advanced, sense of possibility that does not have this problem does not remove it from the ordinary sense. Only rejecting *PW*, the ordinary analysis, or the T rule (as applied to ordinary modality) could do that.

On the disjunctive view, we would reject the simple analysis, putting in its place a disjunctive analysis with two cases, as given above. The trouble with this

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on "necessarily true". Though this is an empirical matter, when I put myself into a modal realist mood, I find it hard to hear this as equivocatory.

Recall that the reason Lewis wanted *PW* to be necessary was so that it would enjoy the same quasi-apriori status as mathematics. Lewis has luckily provided us with a natural experiment in conjunction reduction. He says "Modal and mathematical knowledge *together fall on the right side of the line* [i.e. are *both necessarily true*]" (Lewis 1986, p. 112, my emphasis). This suggests that he found no equivocation between the sense in which he is saying that modal realism is necessary, and the sense in which more familiar necessary truths are necessary.

This is, sadly, not decisive as an objection to Divers, as it is part of his view that the sense in which mathematics is necessary is the extra-ordinary sense. That buys him other problems however, and brings us back to the question of whether the folk find "is necessarily true" ambiguous. Philosophers who've never heard of modal realism, and even ordinary people who've reflected on the matter, tend to regard mathematics as necessary. If it is only necessary in an extra-ordinary sense, then we should expect them to resist "It is necessarily true both that all bachelors are unmarried, and that two plus two is four".

Perhaps Divers' view is that the folk (and common philosophical opinion) are mistaken about the sense in which mathematics is necessary — people believe mathematics to be necessary in the ordinary sense, which it is not, but mathematics *is* in fact necessary in the extra-ordinary sense. It is as if they think that Jane works at the financial institution when in fact she works by the river. But if that were so, then Lewis's argument that *PW* is quasi-apriori would fail, for he could not expect his interlocutor to agree that *PW* is necessary in the same sense that mathematics is.

is that the view that modality is disjunctive is bound to do funny things to the canons of modal inference.

Consider this sentence:

3.1 There are at least two possible worlds and a blue swan.

Since this sentence contains the requisite vocabulary, it gets to be necessary under the extraordinary disjunct of the disjunctive analysis. So:

3.2 It is necessary that there are at least two possible worlds and a blue swan.

Now, if the most familiar and basic modal inference patterns were valid, we should be able to infer from here:

3.3 It is necessary that there is a blue swan.

Here I am using the rule of distribution of necessity over conjunction — if "p and q" is necessarily-true, then p is necessarily-true and q is necessarily-true. Like the N and K this is very ordinary indeed, and valid in all normal modal logics.[9] But of course, (3.3) is false according to the disjunctive analysis. The disjunctive analysis invalidates the distribution rule.

It might be thought that a more complicated disjunctive analysis could block the move from (3.1) to (3.2). But, as I showed in section 2, no analysis of modality can satisfy all of the criteria (2.1 through 2.4) that Divers seems to be demanding. The failure of the disjunctive analysis to satisfy (2.2) is simply a special case of this.

A striking feature of the argument I just gave is that the canons of modal inference are used to infer from an "advanced" modality into "ordinary" modality, and this feels like an equivocation. But to describe the argument in that way is to fall back into the ambiguity view. It's ambiguities that give rise to equivocation. The disjunctive view is precisely that there is one univocal, but disjunctive, analysis of metaphysical modality. What I have shown is that that univocal analysis does not plausibly validate the canons of modal inference.

We should not get too hung up on the canons of modal inference. Perhaps Divers could reject the move from (3.2) to (3.3). He can even say why it's an

[9] In fact the distribution rule is derivable from the N and K rules. $(p \wedge q) \supset p$ is a classical tautology, so by N, $\Box((p \wedge q) \supset p)$. Suppose $\Box(p \wedge q)$. Then, since $\Box((p \wedge q) \supset p)$, by K, $\Box p$. So $\Box(p \wedge q) \vdash \Box p$.

exception to the distribution rule — it is an inference from a sentence containing some extraordinary vocabulary to a sentence containing only ordinary vocabulary. But the same move could be used to save the simple analysis, as I described in section 2. Let us simply say that "There is a plurality of worlds" is both true and necessarily-false, and say that the T rule is inapplicable in this case because of the sentence's extraordinary vocabulary. Advanced modalizing, if I have understood what it is, no better off than the simple analysis.[10]

4 Against advanced quantification

There is another kind of alleged ambiguity that might help to get *PW* to be necessary. This would not be an ambiguity in the modal idioms, but in quantificational ones. When the modal realist says "there are at least two possible worlds" their quantifiers, it may be said, are extraordinary — they range over all things, in all possible worlds, and over trans-world individuals, things not in one world, but scattered over many. When common sense, however, says "there are no blue swans, but there might have been", its quantifiers are ordinary — they range only over the contents of the actual world (or, in modal contexts, the contents of some other world).

This ambiguity would allow us to save the simple analysis of modality. That analysis speaks of "restricting quantifiers". But, on the current proposal, this is ambiguous. Which quantifiers does it mean? Let it mean the ordinary quantifier. When an extraordinary quantifier appears in a modal context, it will be untouched by the analysis. Sentences like "there are at least two possible worlds" will also be ambiguous. Read in the extraordinary way, this will be true and necessarily so. Read in the ordinary way, it will be false, and necessarily so. The N, K, T, and distribution rules are all respected, provided no equivocation between the two quantifiers takes place.

The problem of section 1 also appears to be solved. Both *PW* and *Swans* are ambiguous between extraordinary and ordinary versions. On either disambiguation, (1.1) is true. As already pointed out, the standard inference rules are valid provided no equivocation takes place, so (1.2) and (1.3) are true. (1.4) is intended

[10]Perhaps a believer in advanced modalizing might hold that the T rule is more important to save than the distribution rule. But the disjunctive view is committed to denying the T rule as well. Consider the sentence "There are two blue swans which are spatio-temporally isolated from one another". This sentence, according to *PW*, is true. This does not contain any talk of worlds, sets, properties or propositions, so when assessing its modal status, only the ordinary disjunct of the disjunctive analysis will be relevant. So the sentence will be both true and necessarily-false, because no one world contains two isolated swans. That is a counterexample to the T rule.

to be a claim made by the modal realist, using the extraordinary quantifier only. In that sense it is true. (1.5) is intended to be a claim of modal common sense. Since common sense knows only the ordinary quantifier, (1.5) is true. The puzzle, it seems, relies on an equivocation.

Perhaps it is something more like this that Divers means with his talk of advanced modalizing. He sometimes says things that suggest it: "[modal realism] treats our ordinary claims about donkeys, swans, and planets, etc. as implicitly world restricted claims" (2002, p. 48) "[The modal realist] appeals to the extraordinary interpretation of modal claims whenever she intends or interprets the associated non-modal content as content that is not world-restricted." (2002, p. 50) Perhaps what we should take from this is that it is not the non-logical vocabulary of a sentence that determines whether it gets the ordinary or extraordinary branch of the disjunctive analysis, but the style of quantification. As I pointed out above, this would obviate the need for anything beyond the simple analysis. All we need to do is understand the simple analysis so that it only touches "ordinary" quantifiers, leaving extraordinary ones alone. If this were Divers' view, he would do better to describe it as "advanced quantification" than "advanced modalizing".

The trouble with this proposal can be seen from Divers' quote about "ordinary claims" above, if we understand it in the way I am now considering. Modal realism treats these ordinary claims as restricted in a sense — but it does not claim, as would be plainly false, that the common sense view that (e.g.) "there are no blue swans" is *intended* to be restricted to anything less than all there is.

On the view I am currently considering, there are two *semantically different* quantifiers between which the ordinary language "there is" / "there are" are ambiguous. One of these is the ordinary quantifier which common sense uses to truly say "there are no blue swans." The other quantifier, supposedly, is only used in discussion of the ontology of modality — for example by the modal realist to say "there are at least two possible worlds". Since the ordinary quantifier is intended to be an unrestricted quantifier — a quantifier that ranges over all there is — the only way to understand the extraordinary quantifier is as intended to range over more than all there is — over all there is and some of what there is not.

Let me put this point another way. Modal realists are not Meinongians. They do not hold that they have discovered a new, possibilist quantifier, unused by actualist common sense, with which they can state a theory not statable with ordinary actualist quantification. Meinongians claim to agree with common sense about what exists, but they add that what exists is not all that there is. The modal realist does not say this. The modal realist is using the unrestricted quantifier that common sense uses to say "there are no blue swans", and she is disagreeing "to an extreme extent" (Lewis 1986, p. 133) with common sense about what there

is. She does not, therefore, treat common sense claims about swans, donkeys, etc. are implicitly restricted. (Not at least if that restriction is *semantic* — part of *what is meant* by the quantifier).

There is another sense in which "there are no blue swans" might be said to be restricted to the actual world. Modal realists may say that when common sense says "there are no blue swans" it is "getting at" something true — but something that would be better said with a quantifier restricted to the actual world. This is not to say that, when the folk say "there are no blue swans", their quantifier is implicitly restricted, so that what they say is true. Rather, what they say is literally false, according to the modal realist. But they may succeed in conveying information that might be truly expressed by "there are no blue swans in the actual world", even though that is not what they said (nor even what they intended to say). This is *pragmatic*, rather than semantic, quantifier restriction. But this phenomenon does not establish an *ambiguity* between two different senses of the quantifier, which is what would be needed for the proposal currently under consideration.

Extraordinary quantification then, is suitable only for non-Quineans about ontological commitment. We might call the view that has been described in this section *modal noneism*. According to modal noneism, possible worlds are Meinongian non-existent objects. They are just the way that the modal realist imagines them to be, except that (with the exception of the actual world) they do not exist.[11] The modal noneist enjoys all of the fruits of possible worlds semantics without (they would say) believing in merely possible worlds. For their view is that merely possible worlds do not exist. Modal noneism avoids all of the problems described in this paper. But it is not modal realism.

5 Metalanguage and object language

Trouble results from the view that *PW* is necessarily-true. Maybe the right reaction to this is not to say that *PW* is contingent, but to say that the whole question of its modal status is an ill-formed question. Questions about the modal status of a sentence can only be posed in a modal language. But, it might be said, the modal realist's analysis of modality has the form of truth conditions in a non-modal metalanguage for sentences of a modal language. In the extensional language of modal

[11] The word "noneism" comes from Richard Sylvan. Noneism, in general, is the view that "None of space, time or location — nor for that matter other important universals such as numbers or attributes — exist... but these items are not therefore nothing, they are each something." (Routley 1979, p. 1) Noneism is intended to be a view comparable to, and rivaling, realism and nominalism about various subject matters. Modal noneism is the application of this programme to possible worlds.

realism, the question of the modal status of true sentences like "there are at least two possible worlds" cannot arise. In the modal language being analysed, "there are at least two possible worlds" means something false — it claims that there are island universes.

Lewis (1968) gives this type of analysis. There he gives translations of the sentences of quantified modal logic (QML) into sentences of first order logic (FOL) that the modal realist would accept. But QML is a different language from FOL. In QML, the question of whether *PW* is necessarily-true cannot be raised because it does not have the expressive resources to state modal realism (in particular, it lacks a quantifier that can range over more than the contents of one world at a time). In FOL, the question cannot be raised because it does not have modal operators.

But Lewis was not claiming in this paper that QML is the logical form of ordinary modal language, still less that the quantifiers of QML are the quantifiers of ordinary language and of common sense. That would be to fall back into the "advanced quantification" view. Rather, he was making the rather more technical point that counterpart theory lacks none of the expressive power of QML.

More generally, though I am attracted by the claim that questions of the modal status of modal realism are somehow ill-formed questions, I do not believe that it can be well cashed by this object language / meta-language distinction. First, modal realism is *not* stated in some non-modal metalanguage. It is stated in English, and in other natural languages. Those are the languages in which philosophy papers stating modal realism are written, and they are modal languages.

Second, this approach would have the vices of advanced quantification. Suppose that the modal realist did intend for their theory to be statable only in some technical, non-modal subset of English. The idea would be that in that metalanguage "there are at least two possible worlds" would be true, while in ordinary English that sentence would make a false claim about actually existing island universes. But this could only be so if the quantifiers of the metalanguage had a larger domain than the unrestricted quantifiers of ordinary English. That is to say, the quantifiers of the metalanguage would have to range over more than what exists, with merely possible worlds among the things that do not exist. And as I said earlier, that would not be modal realism, but modal noneism.

6 Modal eliminativism

My conclusion is that modal realists should regard their theory of modality as contingent. But this should not be regarded as a deep or profound fact. It is

simply a matter of book-keeping and consistency — an odd, if unobjectionable, consequence of the only modal realist analysis of modality that is compatible with the truth of modal realism itself and with the canons of basic modal inference.

I am tempted by a stronger view. Perhaps the modal realist should stay silent on questions of the modal status of *PW*. They should state their theory of possible worlds solely in non-modalised language — which they can do — and offer no systematic translation of all of modal English into talk of possible worlds. They might offer ad hoc paraphrases — perhaps systematic translations of *parts* of modal discourse — but offer no paraphrase of others. Perhaps "*PW* is necessarily-true" is one of the sentences that would not get a paraphrase. This kind of theorist would say: "I cannot analyse modality, but I can paraphrase all of it *that has any clear content*. I can make no sense of questions about the modal status of theories of modality. Most people would agree that senseful questions about modal status can be posed in the non-modal terms of possible worlds. If you can make sense of these questions, paraphrase them into possible worlds terms yourself, and then I will answer them."

This theorist is not a modal realist. Unlike the modal realist, she abstains from using modal discourse entirely. Unlike the modal realist, she cannot claim to have an *analysis* of modality. What she has instead is a programme of paraphrasing away. Her view is that modal discourse lets us pose questions that do not really make sense, and we would be better off not to use it for that reason. She is, in short, a Quinean eliminativist about modality, albeit one who has embraced the modal realist's theory of possible worlds. Modal realists who consider the question of whether modal realist is necessary or contingent to be somehow frivolous or ill-formed should ask themselves if they are really realists rather than eliminativists of this kind.

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References

Bricker, P. (2001). Island universes and the analysis of modality. In G. Preyer and F. Seibelt (Eds.), *Reality and Humean Supervenience*, pp. 27–55. Lanham: Rowman and Littlefield.

Divers, J. (1999). A genuine realist theory of advanced modalizing. *Mind 108*, 217–240.

Divers, J. (2002). *Possible Worlds*. London: Routledge.

Divers, J. (2004). Agnosticism about other worlds: A new antirealist programme in modality. *Philosophy and Phenomenological Research 49*, 659–684.

Divers, J. (2006). Possible-worlds semantics without possible worlds: The agnostic approach. *Mind 115*, 187–225.

Fara, M. and T. Williamson (2005). Counterparts and actuality. *Mind 114*, 1–30.

Hudson, H. (1997). Brute facts. *Australasian Journal of Philosophy 75*(1), 77–82.

Lewis, D. (1968). Counterpart theory and quantified modal logic. In *Philosophical Papers*, Volume 1, pp. 26–39. Oxford: Oxford University Press.

Lewis, D. (1986). *On the Plurality of Worlds*. Oxford: Blackwell.

Marshall, D. (unpublished). A puzzle about genuine modal realism.

Noonan, H. (1994). In defence of the letter of fictionalism. *Analysis 54*, 133–139.

Parsons, J. (2007). Is everything a world? *Philosophical Studies (forthcoming)*.

Quine, W. V. (1966). Three grades of modal involvement. In *The Ways of Paradox*. New York: Random House.

Routley, R. (1979). *Exploring Meinong's jungle and beyond*. Canberra: Australian National University.

Yagisawa, T. (1992). Possible worlds as shifting domains. *Erkenntnis 36*, 83–101.