

Is Lewis' Modal Realism modal realism?

Ross P Cameron
Arché
University of St Andrews

October 21, 2004

1 The Modal Irrelevance Objection

Lewis [12, p5] offers a reduction of the modal to the non-modal. 'P is possible' is to be reduced to 'P is true at some world', where a 'world' here is a 'maximal mereological sum of spatio-temporally related individuals'. [ibid. p69-70] In this paper I offer a challenge to the success of this reduction. I will begin by reviewing a debate between Lewis and some of his opponents about the success of his reduction. Lewis' opponents pressed the charge that for Lewis' analysis to succeed he must "face the problem of explaining what these things [these maximal mereological sums of spatio-temporally related individuals] would have to do with modality if there were any of them." [23, p119 Fn.15] The objection is put across in more detail by Michael Jubien [11, p305]

[I]t certainly makes sense to imagine that there *are* entities rather like the world but that lie outside of its spatiotemporal limits. Given this much, it would be very natural, though hardly mandatory, to say that our world could have resembled these entities in various ways. But why should we suppose that for *any* way our world could have been, there is an entity of this special sort that *is* that way? . . . What can they [Lewisian worlds] have to do with possibility?

We must note at this stage that there are two different lines of objection in this quote from Jubien. There is the question as to what Lewisian worlds have to do with modality (or rather, what they would have to do with modality, were they to exist), and there is the question as to why we should think there is a Lewisian world for every way the actual world might have been. Clearly they are not the same question, and one might wonder why they are lumped together. Part of the aim of this essay is to show that although the two objections are distinct, they are related, and are lumped together rightly.

Lewis responded to the charge of irrelevance by saying that he *had* indeed explained what Lewisian worlds have to do with modality, namely "by saying

that the modal operators are quantifiers over them.” [Lewis op cit. p98] Chihara responds that this does not answer the objection, because it presupposes the truth of the analysis that is up for debate. He says [3, p95]

[Lewis’] response to the Modal Irrelevance Objection was that he had already explained what worlds have to do with modality by saying that the modal operators are quantifiers over them. But that is just what is being disputed . . . So, from the point of view of his disputers, Lewis was simply begging the question against his opponents. . . Lewis responds to [the] objection from the perspective of one for whom the analysis is already beyond question.

There are two questions I think we must have answers to if we are to make a judgement as to who has won this debate. First, we must know whether or not the modal irrelevance objection is an objection that demands a response. If it is, then we must know whether or not Lewis is entitled to respond to it “from the perspective of one for whom the analysis is already beyond question.” [ibid.] I will come back to both of these questions later, but for now I want to flag a worry. The modal irrelevance objection seems similar to Moore’s open question argument against ethical naturalism [17]. Moore thought that goodness could not be identical to any natural property Φ because it was always an open question whether or not Φ is good. That seems similar to challenging the view that what is possible is what is true at a world on the grounds that we cannot see what worlds have to do with modality. And in both cases the worry is this: if the objection is good, would it not simply rule out any informative reduction?

Proponents of the modal irrelevance objection must answer the following challenge: if we are to answer the first of the above two questions in the affirmative, why is it that the objection does not rule out any informative reduction whatsoever? I will come back to this question.

2 Keeping it Real

Modal realism is not attempting to eliminate modal facts and replace them with facts about Lewisian worlds. Rather, facts about Lewisian worlds are being offered as an *analysis* of modal facts. Modal realism admits that there are genuine modal facts, and says that they are the same facts as certain facts about Lewisian worlds. It is a *realist* programme then; the goal is not to do away with modality, but to reduce it to something less mysterious. If we are to know whether this succeeds, then, we must first know what it takes to be a realist about some realm of facts.

Before we begin, a note on terminology. Lewis admitted that he had given his theory a bad name [Lewis op. cit, *pvi*]. Since the question I am concerned with is whether his theory, which he calls ‘Modal Realism’, is a realist theory of modality I will, to avoid confusion, refer to Lewis’ theory as ‘Lewisian realism’

and reserve the term ‘modal realism’ for any theory which is a realist theory of modality, in the sense to be made clear in what follows.

My starting point is with Devitt, and against Dummett, in thinking that realism is a metaphysical, ontological, thesis, and not a thesis about semantics.¹ For Devitt there are two dimensions to realism, it is both “a claim about what entities exist and a claim about their independent nature.” [Devitt, op cit. p14] Realism is a conjunctive doctrine then, having two conjuncts. One is a realist about Φ , or about the Φ s, iff one thinks that (the) Φ (s) exist(s) *and* one holds that the existence of (the) Φ (s) is appropriately independent; and for Devitt, this amounts to mind-independence. So realism about (the) Φ (s) amounts to the doctrine that (the) Φ (s) exist, and do so independently of the mental realm. I want to look at both conjuncts of this conjunctive definition.

2.1 Mind independence

I want to deal firstly with the worry that Devitt’s definition rules out realism about the mental. Mental facts are, trivially, not mind-independent. Trivially then, it seems, one cannot be a realist about the mental according to Devitt’s definition; yet anti-realism about the mental is not a trivially true position.

John Heil says regarding this problem that “You are a realist about a given domain . . . if you regard that domain as mind independent: the domain is what it is quite independently of how we take it to be.” And when he considers whether minds are mind independent he says “Well, minds are what they are independently of how we take them to be.” [10, p11] But still one might think that the problem remains: what minds *are* may be independent of what we think about them, but what is true of the mental realm is not independent of what we think about it, since what we think about it is itself one of those truths.

But Heil’s comments show us, I think, what our response to this worry should be. The claim about mind-independence should concern not the *content* of the statements in question, but rather their *ontology*. It is true, trivially, that the content of statements about the mental are mind-dependent. But the ontological commitments of those statements are mind-independent. Minds are, as Heil says, what they are independently of how we take them to be; likewise with sensations, thoughts etc. Statements about such things depend for their truth on how the mental-realm is; but that there are such things, and that they are what they are, is itself mind-independent.

So I see no problem with the mind-independence criterion of Devitt’s definition; but I cannot say the same with respect to the existence criterion.

¹Devitt’s views on realism receive their fullest exposition and defence in his [5]. See in particular Ch.14 for an attack on Dummett. Dummett’s semantic account of realism is found throughout his writings. See in particular his collection [8].

2.2 Existential commitment

Why should it be built into the definition of realism that realism about a discourse is existentially committing? Devitt says that realism about (the) Φ (s) entails that (the) Φ (s) exist. But with some discourses that doesn't even seem to be well formed. What does it mean to say that modality exists, or that morality exists? What is it I commit myself to the existence of if I am a realist about modality or ethics?

One might take realism about modality/morality etc to be equivalent to realism about modal/moral *facts*. The belief that water is necessarily H₂O, say, commits one to the existence of the *fact* that water is necessarily H₂O. If one believes in modal facts and believes that they are not constitutively dependent on the wrong kind of facts, then one is a modal realist. What sort of things are facts? Perhaps they are Tractarian facts, like Armstrong's states of affairs, or perhaps they are merely true propositions.² Someone would be a modal realist, then, either if they believe that there are true propositions of the form 'Necessarily p' or 'Possibly p' or if they believe in states of affairs of p being necessary/possible etc, provided that the true propositions do not constitutively depend for their truth on the truth of propositions of the wrong kind or that the existence of the states of affairs is not constitutively dependent on the existence of a states of affairs of the wrong kind.

The problem is obvious though: this understanding of modal (and moral etc) realism rules out a nominalist who is not prepared to countenance the existence of facts in either of the above senses as being a modal realist. But surely just refusing to believe in facts should not disqualify one from being a modal or moral realist. The nominalist will resent the implication that she is, in virtue of her nominalism, committing herself to anti-realism.

Devitt [6] tries to allow for the nominalist realist in the case of ethics by making his definition of moral realism acceptable to one who doesn't believe in facts. His first characterisation of moral realism is as above: that there are objective moral facts. The existence dimension is served by the claim that there *are* these facts, and the (mind) independence dimension by the claim that they are objective. Devitt's response to the nominalist worry is to try and paraphrase away the existential commitment to facts in the definition of moral realism. He redefines moral realism as the doctrine that there are people and acts which are objectively moral good/bad, ought to be performed etc. The existence dimension is served now, of course, by commitment to people and acts — the first at least of which the nominalist should have no objection to (and probably the latter once 'acts' is given a suitable nominalist reduction), the independence dimension by the claim that what is true about those things is true objectively and mind-independently. So there is nothing, once commitment to facts is thus

²Remaining neutral on what propositions are — perhaps they are sui generis representational entities, or perhaps they are sets of possible worlds — although not Lewisian worlds if the conclusion of this paper is correct. The answer is irrelevant to my arguments.

paraphrased away, to prevent the nominalist from being a moral realist.³ But whether or not this is an appropriate move for moral realism, the analogous move for modal realism would be no good. Modal realism cannot be the doctrine that there are things which are necessarily or possibly such and such, for that would account for de re modality only, not de dicto modality. One might think that the de dicto modal facts could be reduced to the de re modal facts that could be true of *the world*. This is encouraged by how we sometimes speak: we talk of the propositions that might be true, for example, as *ways the world could be*. But the thought should be resisted, at least when we are looking for a definition of modal realism. It is an open question whether the object that is the world⁴ could be such that p was true of it, for all, or even some, contingently false p. For example, it would be a perfectly consistent position for the Lewisian realist to hold that the world is essentially as it is. That would just be to claim that the only counterpart of the actual world is itself; it would *not* be to claim that every truth is necessary because it would still be true that there are worlds in which some propositions which are actually true are false, it is merely denied that those worlds are counterparts of the actual world. Another example: most people, even most philosophers, think it is possible that there could have been more objects than there actually are. The possible worlds theorist (Lewisian or otherwise) will, if they accept that, accept that there are worlds which contain things which don't actually exist (or things which are not the counterpart of any actual object) and which properly contain a duplicate of the actual world. I.e. there is a world, W_1 which has as a proper part a duplicate of the actual world $W_{@}$. What is the counterpart of the actual world at W_1 (or, what is identical to $W_{@}$ at W_1)? Is it W_1 itself, or is it the proper part of W_1 which is a duplicate of $W_{@}$, call it W_1^- ? (It could, of course, be both if we are counterpart theorists.) It seems fairly natural to say that (the counterpart of) $W_{@}$ at W_1 is W_1^- and not W_1 , for W_1^- is more similar to $W_{@}$ than W_1 is. In that case there are de dicto possibilities, ways the world could be, that do not correspond to any de re way the actual world could have been.

³Incidentally, Devitt is still not happy with this. His problem is that a non-cognitivist could agree to the definition of moral realism given; he says “noncognitivists are likely to *accept* [the definition given], reinterpreting its language so that it involves no commitment to a moral reality. They are likely to agree, say, that some people are objectively honest but interpret this as simply an expression of emotion, or whatever. *Noncognitivists seem to talk like moral realists.*” [ibid. p6] Devitt attempts to fix this by making appeal to rights and duties; metaphysical groundings he hopes the non-cognitivist will be unhappy with. But it's not clear this is necessary; surely the natural response to the noncognitivist would be that although they believe that there are acts etc which are objectively bad they don't believe that it is *true* that they are objectively bad (precisely because they don't believe such judgements are truth-apt). Moral realism could simply be characterised as the doctrine that there are people and acts etc of which it is true that they are objectively bad etc. As Devitt remarked earlier in the same essay [ibid. p2], this doesn't make realism a semantic doctrine since the underlying metaphysics remains the same.

⁴If indeed there is such a thing. I am thinking of someone who held a doctrine of restricted composition or compositional nihilism. They may deny that there is an object which is the world, and analyse de re claims of how the world could be as what could be true of those (simple or complex) objects that are arranged worldly. I take it that it is an open question whether such an analysis could succeed.

So some analyses of modality will yield the result that facts about what might be true correspond to what might have been true of the actual world in the way that an analysis of de dicto modality in terms of de re modality would require, and other analyses will not. I think there is a good case to be made that an analysis of modality should *not* allow for that analysis, but at any rate I think it is clear that our definition of realism should not prejudge this issue.

I don't think there's any way we can keep the demand that realism about (the) $\Phi(s)$ commits one to the existence of some particular thing(s); not at least without prejudging issues that ought not to be prejudged by a definition of realism. I suggest then that we abandon the existence condition in our characterisation of realism. But I don't think that's particularly worrying. Why did we need that condition in the first place? I guess Devitt's thought is that one cannot be a realist about ordinary objects, or scientific unobservables, etc, if one does not believe that such things exist. But we can accept that without it being built into our definition of realism that it is existentially committing; all we need is a doctrine of ontological commitment. Quine's will do. Let the ontological commitments of a sentence be exactly those things that must be in our domain of quantification if the sentence is to be true. Since the realist about ordinary objects or scientific unobservables is committed to some statements about ordinary objects or scientific unobservables being true, then she is thereby committed to the existence of ordinary objects or scientific unobservables. A doctrine of ontological commitment is all that is needed to discount as a realist about the external world someone who doesn't believe in trees; the work doesn't need to be done by our definition of realism. The *anti-realist* can perhaps consistently claim that a statement is true (in some minimal sense) but resist the claim that what the statement talks about really exists. But the realist has no such refuge. If the realist asserts that a statement is true, *really* true, then they thereby commit themselves to the existence of those things which must exist in order for the statement to be true. This is just to say that the realist has no choice but to accept the ontological commitments of those statements which she accept as true. But it is not her commitment to realism per se that brings this commitment; it is the doctrine of ontological commitment.

So realism about discourses will, in general, be existentially committing; but the existential commitment is incurred as a result of holding that statements of the discourse are true, and their being ontological commitments of the statements in question. This ties nicely with what we had to say about Devitt's first criterion of realism because, as we saw, the mind-independence claim concerns the ontological commitments of true sentences in the discourses. So I think we should agree that Devitt's definition of realism is roughly correct, but slightly ill-stated. Let us define realism as follows.

Realism about (the) $\Phi(s)$ is the doctrine that
(i) there are true sentences regarding (the) $\Phi(s)$ and
(ii) the ontological commitments of those true sentences are mind-independent.

3 Reductions versus Eliminations

We know now what it is to be a realist about a given discourse: to hold that there are true statements in the discourse and that the ontological commitments of those true statements exist mind-independently. However, knowing what realism is is not enough to settle all disputes about whether or not someone is a realist about a given discourse. Why not? Because we can agree about whether someone holds that a statement P is true, and that they hold the ontological commitments of P to exist mind-independently, but disagree as to whether or not P is part of the discourse of Φ . That is, suppose I think that X is a realist about the Φ s and you think X is not a realist about the Φ s. Our debate need not be over whether X holds some particular statements to be true, or about whether or not X holds certain things to be mind-independent. We can agree on all of that and disagree as to whether X is a realist about the Φ s by disagreeing on what it takes for a statement to be part of the Φ discourse. This amounts to a debate over whether X is a realist about the Φ s and is providing a *reduction* of the Φ s, or whether X is merely an *eliminativist* about the Φ s. Consider some examples.

Imagine two theorists, McTaggart* (who holds a position on time somewhat akin to that held by McTaggart in his [16]) and Smart* (who agrees largely with what Smart has to say about time in his [21]).⁵ Both theorists agree, in one sense, on how the world is. Both of them think of the world as a four-dimensional whole. They both think that, according to some frame of reference, some events occur simultaneously to my writing this, and that some events occurred before and that some events will occur after, and both agree that there is no ontological difference between the three kinds of event. They both agree that there is a B-series of events but no A-series. But there is a difference between McTaggart* and Smart* — or at least, there is a difference in how they *describe* their positions: Smart* claims to believe in time and McTaggart* doesn't. McTaggart* is an eliminativist about time — he thinks that by abandoning the A-series we thereby abandon time; Smart* is a reductive realist about time — he thinks true statements about time can be reduced to true B-theoretic statements.

Or consider Armstrong* (C.f. [1]) and Churchland* C.f.[4]).⁶ Both agree, in one sense, on how the world is. Both of them agree that the world is entirely composed of physical things; in particular, both of them deny that there is a realm of the mental which is independent of the physical. Both of them likewise agree that there are brain states — neural firings and so on. But while Armstrong* says that these brain states *are* the mental states, Churchland* says that there are no such things as mental states. Armstrong* aims to provide a

⁵The purpose of the stars is to eliminate irrelevant differences between what the real theorists actually think; in this case they are intended to filter out the many things that McTaggart believed in that Smart would have no time for, and to filter out McTaggart's claim of himself that he doesn't believe in a B-series.

⁶In this case the stars are intended to filter out the fact that Armstrong and Churchland both have a very different picture of how the brain works.

realist reduction of the mental, Churchland* aims to eliminate it.

Or consider a theorist, call him Bob, who thinks that there are no enduring objects. Objects that persist then, thinks Bob, do so by perduring — by having a temporal part at every moment of their existence. Persisting objects, for Bob, are mereological sums of temporal parts. Bob doesn't believe in unrestricted mereological composition however; and in particular he doesn't believe in the mereological sums which someone like Lewis says are persons. Bob says that there are no persons. Contrast him with Sara. Sara agrees with Bob that the only persisting objects are perduring objects, and agrees with him exactly about which collections of temporal parts compose a perduring object. In particular, she agrees with Bob that the collections of temporal parts which Lewis thinks compose persons do not exist. But Sara believes that there are persons; she is a stage theorist and thinks that persons are instantaneous time slices. Sara is a reductive realist about persons, Bob an eliminativist.

Or consider the regularity theorist about laws and the theorist who thinks that there are no laws and that all there are are regularities; or the truthmaker theorist like Josh Parsons [18] who thinks that concrete particulars are truthmakers and the theorist who thinks that there are no such things as truthmakers because they are a nominalist and only believe in particulars. The literature is replete with similar examples.

Consider how each of these pairs of theorists will be viewed by their common opponent who disagrees with them both about the ontology of the world. Consider, for example, how McTaggart* and Smart* will be viewed by the A-theorist. The A-theorist will be sympathetic with McTaggart* that *if* the world is as he says then there is no time, for the A-theorist thinks that for there to be time there must be an A-series of events. The A-theorist *does* think that there is an A-series, of course, and therefore resists McTaggart*'s conclusion that there is no time. The A-theorist will think of McTaggart*, as McTaggart* would think of himself, as an eliminativist about time; they are agreeing on how to describe each others positions, but disagree on what there is in the world. But the A-theorist will disagree with Smart* about how to describe his position. Smart*, according to the A-theorist, is making the same mistake McTaggart* is making: thinking that there is no A-series and thus no time. But Smart*, according to the A-theorist, is making a further mistake: he thinks he believes in time. But if the A-theorist is right about what time is then Smart* doesn't believe in time, because he doesn't believe that there is an A-series.

Similarly the dualist will view Churchland* as he views himself — as an eliminativist about the mental. But while Armstrong* will claim to be a realist, albeit a reductive realist, about the mental, the dualist will claim that he is not only mistaking what there is, but he is also making a mistake about what he believes in: he claims to believe in minds but really only believes in bodies.

Smart*, Armstrong* etc will not, of course, describe themselves as eliminativists; they will claim to be offering a realist reduction. But if their opponents are right about what it takes for the world to be such that there is time, or

what it takes to be a mental state etc, then they are wrong to claim that they are realists.

We are, I want to argue, in the situation with regards to Lewis as the A-theorist is in with regard to Smart*, or the dualist with regard to Armstrong*. Ask yourself: What would be the difference between Lewis and someone who was like Lewis but an *eliminativist* about modality? Call the latter theorist Lewis*. Lewis* agrees with Lewis on what there is; both agree that there are Lewis-many island universes, in accordance with the principle of recombination. But while Lewis says that the modal facts are facts about what is true at some Lewisian world, Lewis* says that there are *no* modal facts. Where Lewis aims to show us that modality is to be regimented in terms of talk of Lewisian worlds, Lewis* urges us to do away with modality and *replace* it with talk about Lewisian worlds. Surely from our point of view there is simply no difference between the theories offered by Lewis and Lewis*, yet one claims to be a realist about modality and the other an eliminativist. Doesn't that suggest that we should be wary of taking Lewis at his word when he claim to believe in modal facts? Insofar as we have reason to think that modal facts cannot be reduced to facts about Lewisian worlds then we have reason to think that Lewis is not a modal realist but an eliminativist about modality. Of course, he will not describe himself thus; but we have no reason to take him at his word.

What is the difference between providing a reduction of a discourse Φ to a discourse Ψ and providing an elimination of Φ *in favour of* Ψ ? The reductionist aims to capture the content of the target discourse in the base language. In order to make good the claim, then, that they have provided a reduction and not an elimination, they need make good the claim that the base discourse captures the content of the target discourse. The Lewisian realist claims to be a modal realist. The truth of modal statements is, for the Lewisian, constitutively dependent on the truth of propositions of the form 'At all Lewisian worlds, p' or 'There is a Lewisian world at which p', so the question as to whether Lewis is a modal realist turns on the question as to whether truths about Lewisian worlds are the right kind of propositions for modal propositions to be constitutively dependent upon. If they are, then he is a reductive realist about the modal; one who reduces the modal discourse to a discourse about Lewisian worlds. Otherwise, he is an eliminativist about the modal; one who attempts to replace the modal discourse with a discourse concerning Lewisian worlds.

Now, facts about what is true at some Lewisian world only serve as an adequate reductive basis for modal facts if there is a Lewisian world for every way the actual world might be, for otherwise there are not enough Lewisian worlds to make intuitively true modal claims come out true according to the analysis. In that case we only have reason to think that Lewisian realism is a realist position about modality if we have reason to think that there are Lewis-many worlds — by which I mean a Lewisian world for every way the actual world might be. But only Lewisian realists believe that there is a Lewisian world for every way the actual world might be, so only Lewisian realists have reason to believe that

Lewisian realism is a realist position about modality. We of the establishment who believe that there is only one Lewisian world have no reason to think that facts about what is true at some Lewisian world serve as an adequate reductive basis for modal facts; to us the proposal to reduce modal facts to facts about what is true at some Lewisian world looks like it would yield the unwanted consequence that every truth is necessary. In that case the non-Lewisian realist has no reason to accept Lewisian realism on the grounds that it provides a reduction of modality, since they have no reason to think that that claim is true. To them, Lewisian realism will look like eliminativism about modality; it reduces modal facts to the wrong kinds of facts, just as according to the A-theorist the B-theorist reduces tensed statements to the wrong kind of facts and thus eliminates them as opposing to providing a realist reduction. This, I am going to argue, results in warrant for Lewisian realism being unobtainable.

4 Why warrant for Lewisian Realism is unobtainable

Lewis is a realist about something; that is not up for debate. He believes there are true statements about Lewisian worlds, and he holds that the ontological commitments of these statements (the vast ontology of non-actual things) exist mind-independently. The question is whether or not he is a realist about *modality*. And I have argued that we have no reason to think that Lewis is a realist about modality since he reduces modal facts to (what we think are) facts of the wrong kind — facts about what is true at a Lewisian world. This, I think, accounts for the intuition behind the modal irrelevance objection, and also dispels the worry that it would generalise to knock out any informative reduction. The intuition guiding our ‘but what have Lewisian worlds got to do with modality?’ worry is simply that we are worried that facts about spacetimes are not the right kind of fact to ground modal facts, and thus worried that Lewis is providing no genuine reduction of modality. Now if that worry was only that there was no transparent conceptual connection between what is true at a world and what is possible then the worry would be no better than Moore’s open question argument, and looks like it would, if sound, generalise to knock out any successful reduction. But that is not the worry; the worry is that we have no reason to think that worlds are the right kind of fact to reduce modal facts to. As we will see, that is a worry that can be answered for some informative analyses — thus the objection won’t generalise; but it is a worry that Lewis *cannot* answer.

Lewis cannot answer it for the following reason. In order to make us abandon our worry that facts about Lewisian worlds are not the right type of facts to allow for a realist reduction of modal facts Lewis has to convince us that there is a Lewisian world for every way the actual world might be. That there is such a totality of Lewisian worlds is implied by Lewis’ principle of recombination (Com), below:

Com: “For any individuals x_1, x_2, \dots, x_n there is a [Lewisian] world containing any number of duplicates of each, if there is a spacetime big enough to hold them all, and such that for any spatiotemporal relation the duplicates in question stand in that relation.”⁷

And the problem is this: one would only be inclined to believe Com if one was already a Lewisian realist. Suppose we were not interested in modality but doing ontology for its own sake. Com would not look remotely plausible as a principle about what maximal mereological sums of spatio-temporally related individuals existed. The only warrant one can have, or so it seems to me, to believe that Com tells us about such mereological sums is that Com tells us about possibilities, and that such mereological sums simply *are* maximal possibilities. But in that case Lewis is using the truth of Lewisian realism to justify the truth of that very theory. For one will only accept Lewisian realism if one believes that there is a Lewisian world for every way the actual world might be; otherwise we cannot overcome the worry that facts about Lewisian worlds are the wrong type of facts to reduce modal facts to. But one will only believe that there are enough Lewisian worlds for this if one believes Com, and one will only believe Com if one believes that every way the actual world could be is a way that some Lewisian world is; i.e. only if one is *already* a Lewisian realist. There is a methodological circularity then: Lewis is using his theory to defend his theory; and hence we have no reason to believe it.

The problem is nothing to do with the principle of recombination in particular, of course. The problem would arise with *any* principle that tells us that there are enough Lewisian worlds for facts about them to serve as an adequate reductive basis for modal facts. By definition, we can only have causal interaction with (at most) one Lewisian world; hence (assuming that we can only have empirical justification that something exists if we can stand in some causal relation with that thing) we cannot have empirical justification of the existence of more than one Lewisian world. But we need to be justified in thinking that there is more than one Lewisian world in order to have a justified belief that facts about Lewisian worlds serve as an adequate reductive basis for facts about modality, since we know that there are non-actual possibilities. So it is a necessary precondition for a justified belief that facts about Lewisian worlds serve as an adequate reductive basis for modal facts that we have an a priori justification that there is more than one Lewisian world. But a priori justification that there is more than one Lewisian world only seems possible if we have prior a priori justification that there is a Lewisian world for every way the actual world might be. Then we can infer that there is more than one Lewisian world from our a priori knowledge that there are non-actual possibilities. In that case warrant for Lewisian realism necessarily presupposes warrant for itself. We are only justified in believing Lewisian realism if we are justified in thinking that there is more than one Lewisian world. Justification that there is more than one Lewisian world must be a priori. But we can only have a priori justification that there

⁷The quoted formulation is from [7, p16]. For Lewis' original comments see [12, p87-8].

is more than one Lewisian world if we have a priori justification that there is a Lewisian world for every way the actual world might have been — i.e. only if we have a priori justification in Lewisian realism.

So the objection, in sum, is this. Lewis asks us to believe in the existence of all these cosmoi because of the utility they would have if they exist. Of particular interest is that they would allow for an analysis of the modal in terms of the non-modal. But, so the objection goes, we only have reason to think that facts about Lewisian worlds serve as an adequate basis for a reduction of modal facts if we already believe that there are Lewis-many such worlds. So I should only accept the reasons to believe in the plurality of Lewisian worlds if I already believe in them.

The point applies to analyses in general. I should only accept an analysis of Φ in terms of Ψ if I have reason, *independent of the theory being offered to me*, to think that there is the appropriate correspondence between Φ -facts and Ψ -facts; for otherwise I have no justification for thinking that the theory being offered to me is a genuine realist analysis of Φ . It is no good at all that according to the theory being offered there is such an appropriate correspondence. That only tells me that on the assumption that the theory is true, it is a genuine realist analysis of the Φ s; but that should not convince me that it *is* in fact such an analysis, for it is that very assumption that is up for question — whether the theory is true.

4.1 Abduction

The objection here is by no means denying the legitimacy of inference to the best explanation (abduction). I accept that if the Xs are the best explanation of some phenomena then that is reason to believe in them. But Lewisian worlds are only the best explanation of modal phenomena if facts about them serve as an adequate reductive basis for modal facts, and, as I argue, I only have reason to accept that if I have reason to think that there are Lewis-many of them. So I will not believe in the plurality of Lewisian worlds due to an inference to the best explanation, because it will only seem like the best explanation if I already believe in such a plurality.

So I don't take myself to be denying the legitimacy of believing in new entities as a result of abduction. Let me illustrate by considering scientific abductions.

I take it that a good abductive inference is one of the following form

1. The hypothesis that (such and such a number of) the Fs exists best explains some phenomena E.
2. E
3. Therefore, (such and such a number of) the Fs exist.

In particular, the following abductive inference to their being such and such an amount of dark matter in the universe is, I take it, a good one.

1. The hypothesis that there is such and such an amount of dark matter best explains some phenomena E.
2. E
3. Therefore, there is such and such an amount of dark matter.

Likewise, the following abductive inference is a good one (in form).

1. The hypothesis that there are Lewis-many worlds best explains some modal phenomena M.
2. M
3. Therefore, there are Lewis-many worlds.

But the first premise of this abductive inference is false. The hypothesis that there are Lewis-many worlds does not by itself explain any modal phenomena; the hypothesis that there are Lewis-many worlds *and* that facts about such things serve as an adequate reductive basis for facts about modality is what would explain modal phenomena. So I will only accept the first premise of this abductive inference if I believe that facts about worlds *are* the right type of facts to reduce modal facts to. And, as I have argued, I will only believe this if I am a Lewisian realist. So the difference between the abduction to there being Lewis-many worlds and the abduction to there being dark matter is that I can have reason to believe the first premise of the latter abduction without already believing that there is, in fact, dark matter, whereas I will only believe the first premise of the former abduction if I have the prior belief that there are Lewis-many worlds.

5 Methodology: Lewis versus Forrest

I have argued that one could only be warranted in accepting Lewisian realism if one has reason *independent from Lewisian realism* to think that there is a Lewisian world for every way the actual world might be, but that such reason will not be forthcoming. In order to illustrate the objection against Lewis, and to show why it does not generalise to knock out any informative reduction, let us look at a rival theory of modality which I think avoids this particular objection admirably. That is the theory offered by Peter Forrest in his [9]. Forrest's theory endorses the scheme

$$WN : \Diamond p \leftrightarrow p \text{ is true under}^8 \text{ some world nature.}^9$$

⁸'true under' is Forrest's replacement of Lewis' 'true at' relation.

⁹ibid. p17

The world nature of a world W_1 , for Forrest, is the property which is the conjunction of all the natural properties of W_1 . World natures, then, are Armstrongian structural universals — albeit uninstantiated as well as instantiated ones — which are “in some way *composed* of simpler properties and relations.” [ibid. p17] Forrest recognises that if WN is to prove to be an acceptable reduction of modality then he has to convince us that there are enough of these structural universals to ensure that every Lewisian world has (or rather, would have, were they to exist) a world nature, otherwise we would not be able to account for the possibility of some propositions which are intuitively possible.

So in order for Forrest’s proposed reduction to be acceptable we need to be convinced that what is true under some world nature does not come apart too much from what we pre-theoretically think is possible. Forrest provides us with various principles to tell us about what structural universals there are. Crucial among these is the following principle, which I will call Gen.

Gen: “If R is an m-adic property or relation and S is an n-adic one, then $R \times S$ is just the $(m+n)$ -adic relation which holds between $x_1, \dots, x_m, y_1, \dots, y_n$ just in case R holds between x_1, \dots, x_m and S holds between y_1, \dots, y_n .” [ibid. p17]

Gen is Forrest’s substitute for Lewis’ Com. It generates structural universals by an operation on simpler properties and relations, just as Com generates more complex individuals by an operation on simpler individuals (i.e. maximal mereological sums from non-maximal mereological sums). Let us grant for the sake of argument that Gen (in conjunction with certain other principles that Forrest appeals to) implies the existence of a plurality of structural universals which makes what is true under some world nature cohere sufficiently with what we pre-theoretically think is possible. As before, the question is whether or not Gen is true. And the benefit of Forrest’s theory over Lewisian realism is that Gen looks like exactly the sort of principle we would accept if we were interested in a theory of structural universals for its own sake rather than as a proposed reduction of modality. Gen exploits the analogy between complex properties constructed from simpler properties and complex mereological sums constructed from simpler individuals that believers in structural universals tend to accept. Many people believe that if we are going in for talk about mereological sums then we ought to believe that given any individuals a and b there is an additional object which is the mereological sum of a and b. The parallel thought is that if we are going in for talk about structural universals then we ought to believe that given a property G and a property H then there is a property $G \times H$ which holds between x and y just in case x has G and y has H.¹⁰ It is this thought that Forrest is aiming to capture with Gen.

Gen does not rely for its plausibility on the supposition that the complex properties which are the structural universals are maximal possibilities; thus Forrest does not need to appeal to the truth of WN in order to justify Gen. And hence Gen can be used to justify WN without falling into the methodological

¹⁰cf ibid. p17

circularity that befell Lewisian realism. That means that we can recognise that Forrest's reduction of modality is a *realist* reduction. We don't need to believe WN to be convinced that the reduction it offers is successful. If we believe in structural universals then we can be convinced *independently of the theory that implies WN* that there is necessarily a one-one correspondence between what is possible and what is true under some world nature. Thus we can be convinced, from the standpoint of the theory that we currently accept, that facts about what is true under some world nature serve as an appropriate reductive basis for modal facts, and hence abandon any worry that Forrest is in fact an eliminativist about modality. So no modal irrelevance objection applies to Forrest.

I said in the above section that we should only accept a theory T which reduces modal facts to some realm of facts F if we have grounds *independent of theory T* to think that F serves as an adequate reductive basis for the modal. This is what Forrest offers us when he offers us reason to believe that what is possible is true under some world nature which are *independent* of the success of his reduction of the modal; it is what is lacking from Lewis.

Forrest sees a similar point: when anticipating the objection that his theory makes use of a controversial ontology (not only structural universals but uninstantiated ones) he says "All this is, no doubt, controversial. But in many cases I provided an *independent* motivation for what I require." [ibid. p24] This is the crucial difference between Forrest's theory and Lewis'. If you believe in mereological sums then you will not accept Com as a principle which tells you what maximal mereological sums of worldmates exist unless you already believe that such things are maximal possibilities. Whereas if you believe in complex properties then I think you are likely to accept Gen as a principle that tells you about what structural universals exist before you even consider whether such things are useful to modality. Note that I am not here arguing for Forrest's theory; I am remaining neutral as to whether there are independent reasons to believe in his structural universals. I merely aim to praise Forrest's methodology — whether his theory is successful is another matter.

6 Conclusion

Let us return to the two questions I asked about the modal irrelevance objection at the start. First I asked whether the modal irrelevance objection is an objection that demands a response. I argue that it is, because behind the objection lies the thought that facts about Lewisian worlds are the wrong kind of facts to serve as a reductive basis for the modal, and if this goes without a response then we will not be convinced that Lewis has really given a reduction of modality; he will appear to us instead to be an eliminativist about the modal. Secondly I asked whether Lewis is entitled to respond to the objection from his own perspective — the perspective of the Lewisian realist. Well, in a sense he is and in a sense he isn't. He is entitled to so respond in so far as he is attempting

to justify the claim that *by his own lights* the modal irrelevance objection does not show that his reduction is unsuccessful. On this score we should agree with Lewis; the modal irrelevance objection should not be expected to convince the Lewisian realist that his reduction of modality does not work. But in so far as Lewis is trying to give us *reason* to be a Lewisian realist he is not entitled to respond to the modal irrelevance objection from the point of view of the modal realist, since that response is obviously one his opponent will not accept.

We can see also how Jubien's two objections are related. It is the lack of reason to believe that there is a Lewisian world for every way the actual world might have been that gives rise to the modal irrelevance objection, because it is the absence of there being enough facts about how some Lewisian world is that makes facts about Lewisian worlds the wrong type of facts to serve as an adequate reductive basis for the modal.

The modal irrelevance objection should not be understood as an attempt to expose some internal inadequacy of Lewisian realism; rather it should be seen as a methodological objection to Lewisian realism. It challenges the justification for accepting Lewisian realism by showing that one will only accept that the theory is a realist theory of modality if one already believes the theory. One is justified in thinking that Lewisian realism is modal realism only if one is justified in thinking that facts about what is true at some Lewisian world are the right kind of facts to serve as a reductive basis for modal facts. One is justified in thinking *that* only if one is justified in thinking that there are Lewis-many Lewisian worlds. But the justification for the claim that there are Lewis-many Lewisian worlds relies on the principle of recombination, which one is only justified in believing if one is a Lewisian realist. In that case one can only have justification for accepting Lewisian realism if one is already a Lewisian realist; which makes justification for Lewisian realism unobtainable.

My objection denies a certain methodology that is sometimes adopted, in conversation at least, if not in print: that when deciding between rival theories we suppose each of the rivals to be true, weigh up the benefits and the costs of accepting the theory on that assumption, and then adopt the theory that maximises benefit and minimises cost. If that were how theories were chosen then Lewisian realism would do a lot better than I have suggested, for Lewisian realism does indeed offer a successful reduction of the modal on the assumption that it is true because, on the assumption that it is true, facts about what is true at a Lewisian world are the right kind of facts to reduce modal facts to. But that methodology is not a good one. Why should I be interested in how a theory fares as to costs and benefits on the assumption that that theory is true? Should I not be interested in how it fares by my current lights? After all, the theory I currently hold is the theory I believe, and believe I have good reason to believe, is true. Why should I care how a theory fares on an assumption that I think is false? Shouldn't I ask how it fares on an assumption I think is true? When deciding between rival theories I should weigh up their costs and benefits as they are by the lights of my current theory, and by this method Lewisian

realism is not very good at all, because it fails to give a reduction of modality. I conjecture that the reason philosophers have sometimes been attracted to the other methodology is that they think that otherwise abandoning one theory in favour of another would never happen. For why, if I am judging rival theories by the lights of my current theory, would I ever abandon my current theory, since obviously any rival is going to be false by the lights of my current theory. (That's what it is to be a rival.) But really this is no problem. It is true that any rival theory is going to be false by the lights of my current theory, but that does not rule it out being better justified. A rival theory, although false by my current lights, will be better justified than my current theory if it provides a better explanation for data which is recognised by my theory as requiring explanation. It is clear then how theory progression is possible; we are justified in abandoning our current theory T and adopting T* when T* is, by the lights of T, more explanatory than T, even though T* is false by the lights of T. So I can be justified in accepting a theory which is to my lights false, because it is, by my lights, more explanatory.

The idea that theories are chosen by weighing up the rivals by their own lights would never do. For since the means by which we measure the costs and benefits of rival theories are themselves determined by our theory, this would make it a simple matter for someone to force on us an unacceptable theory that we could not then get rid of. For methodology is but a part of our theory, and if a rival theory were presented to us which said of itself that it is the best theory and cannot be improved upon, then if we were to judge that theory by its own lights we would indeed be convinced that it was the best theory and that it could not be improved upon.¹¹

Lewisian realism provides a genuine realist reduction of modality on the assumption that it is true. But why should we care about that? Why should I care about the benefits of a theory on the assumption that it is true when I do not myself believe that it is true. And in particular, how can I be expected to accept this as a reason to believe Lewisian realism? I am being asked to accept that Lewisian realism is true on the grounds that it is explanatory if it is true. But I have no grounds to believe that it is explanatory: for to have grounds I would have to discharge the antecedent of the previous conditional. But the antecedent is precisely what is up for debate: whether or not Lewisian realism is true.¹²

¹¹As an example, consider a parody of the Holy Gospels which proclaim themselves to be the truth, the whole truth, and nothing but the truth, as divinely revealed by God.

¹²I have benefited greatly from the encouragements and/or unflinching criticisms of the following people: Elizabeth Barnes, Bob Hale, Katherine Hawley, Andrew McGonigal, Joseph Melia, Daniel Nolan, Josh Parsons, Agustin Rayo and Crispin Wright.

References

- [1] David Armstrong. *The Mind-Body Problem: An Opinionated Introduction*. Westview Press, Boulder Colorado, 1999.
- [2] D.F. Austin, editor. *Philosophical Analysis*. Kluwer, Dordrecht, 1988.
- [3] Charles Chihara. *The Worlds of Possibility*. Oxford University Press, Oxford, 1998.
- [4] Paul M Churchland. Eliminative materialism and the propositional attitudes. *The Journal of Philosophy*, 78(2):67–90, 1981.
- [5] Michael Devitt. *Realism and truth*. Blackwell, Oxford, 1984.
- [6] Michael Devitt. Moral realism: A naturalistic perspective. *Croatian Journal of Philosophy*, 2:1–15, 2002.
- [7] John Divers and Joseph Melia. The analytic limit of genuine modal realism. *Mind*, 111(441):15–36, 2002.
- [8] Michael Dummett. *Truth and other enigmas*. Duckworth, London, 1978.
- [9] Peter Forrest. Ways worlds could be. *Australasian Journal of Philosophy*, 64(1):15–24, 1986.
- [10] John Heil. *From an Ontological Point of View*. Oxford University Press, Oxford, 2003.
- [11] Michael Jubien. Problems with possible worlds. In Austin [2], pages 299–322.
- [12] David Lewis. *On the Plurality of Worlds*. Blackwell, Oxford, 1986.
- [13] David Lewis. Against structural universals. In *Papers in Metaphysics and Epistemology* [15], pages 78–107.
- [14] David Lewis. A comment on Armstrong and Forrest. In *Papers in Metaphysics and Epistemology* [15], pages 108–110.
- [15] David Lewis. *Papers in Metaphysics and Epistemology*. Cambridge University Press, Cambridge, 1999.
- [16] J.M.E. McTaggart. The unreality of time. In *The Philosophy of Time* [19], pages 23–34.
- [17] G.E. Moore. *Principia Ethica*. Cambridge University Press, Cambridge, 1903.
- [18] Josh Parsons. There is no truthmaker argument against nominalism. *Australasian Journal of Philosophy*, 77(3):325–334, 1999.

- [19] Robin Le Poidevin and Murray MacBeath. *The Philosophy of Time*. Oxford University Press, Oxford, 1993.
- [20] Theodore Sider. *Four-dimensionalism*. Oxford University Press, Oxford, 2001.
- [21] J.J.C. Smart. *Philosophy and Scientific Realism*. Routledge and Kegan Paul, London, 1963.
- [22] James E Tomberlin and Peter van Inwagen, editors. *Alvin Plantinga*. Kluwer, The Netherlands, 1985.
- [23] Peter van Inwagen. Plantinga on trans-world identity. In Tomberlin and van Inwagen [22], pages 101–120.