USE OF THESES

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PARADISE FOR NOTHING?
A CRITIQUE OF MODAL FICTIONALISM

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A thesis submitted for the degree of Master of Arts at the Australian National University.
In accordance with sub-rule 15 (2), I hereby indicate that this thesis is entirely my own original work.

STUART BROCK
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Writing a dissertation is rarely done in isolation. One's ideas can develop and mature only if they are discussed with others. In the course of writing this dissertation, I have benefited greatly from more than my fair share of such discussion. I would like to take this opportunity to acknowledge my debt and gratitude to these people. Apologies to those I have undoubtedly forgotten.

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Modal fictionalism is the thesis that possible worlds and possible individuals are fictitious entities of some kind or other and that the fictions about such entities are useful in so far as they are an aid to the analysis of our modal idioms. This essay should be seen as an attempt to defend a particular variety of modal fictionalism, a defense that falls into two main parts.

The first—comprising chapters two and three—examines the different varieties of modal fictionalism put forward by Armstrong (1989) and Rosen (1990) and defends a modified version of the thesis. I conclude that there are problems associated with both theses. I then defend a modified version of Rosen’s thesis that overcomes the qualms raised in the previous chapter.

The second part—comprising chapters four and five—contrasts modal fictionalism with modal realism. I conclude that both the fictionalist and the realist face certain irresolvable problems. It is my contention, though, that the problems associated with the realist’s thesis are far more worrying than those associated with the fictionalist’s thesis.

I have also included a discussion of a paper by Harold Noonan (1994) in an appendix to this thesis. Noonan provides an alternative solution to some of the problems I raise in Chapter 2.
PARADISE FOR NOTHING?  
A Critique of Modal Fictionalism

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Despite protestations to the contrary, philosophers have always been renowned for espousing theories that do violence to common-sense opinion. In recent times there has been one philosopher keen to follow in this tradition. According to this philosopher there are ghosts, goblins, witches, warlocks, angels, archangels, devils and demons. There are little green men who walk around with toast and jam on their heads six days of the week (on Sundays they wear crumpets and honey). There are swans that smoke cigars and monkeys that fly. What is truly unfortunate, however, is that we will never become acquainted with these strange and exotic creatures. Why? They exist in a region of space-time discontinuous with ours.

This somewhat fantastic idea is of course put forward by David Lewis. The suggestion is made in the context of discussions about modality and related issues. But it is important to stress that these claims are not modal claims. They are merely assertions about what exists. Perhaps, then, we should spell out in a little more detail some of the ontological claims made by Lewis.

THE ONTOLOGICAL THESIS:

(i) There are other worlds and other individuals that occupy those worlds.

1See Lewis, D.K. (1968); (1970); (1973); (1986).
(ii) The other worlds are of the same kind as our world. There is an ontological parity between this world and the others. The individuals that occupy those worlds vary in kind, just as they do in this world. Some other worldly individuals are of the same kind as individuals in this world, others are not.

(iii) No single world has spatio-temporally disconnected parts. No two worlds are spatio-temporally continuous with one another. Two individuals are part of the same world if and only if there is some spatio-temporal relation that holds between them.

(iv) There is a plenitude of worlds that is closed under a principle of recombination. The principle can be formulated (somewhat roughly) as follows: for any collection of individuals from any number of worlds, there is a single world containing any number of duplicates of each. The number of worlds (and the number of individuals) is therefore indenumerably infinite.\(^2\)

On its own, Lewis's ontological thesis is an outrageously implausible hypothesis. The impetus behind the proposal, though, is that it provides a useful way of analysing a diverse range of

\(^2\)This formulation of the principle—adapted from Rosen's (1990) formulation of it (p.335)—is importantly different to Lewis's formulation. Unlike Lewis, Rosen presents the principle non-modally. Moreover, there are a number of modifications Lewis makes to this principle. Such modifications are not important in the present context. See Lewis (1986) pp. 86 - 92.

It might also be noted that some further principles of plenitude seem to be required if we are to guarantee that there are no gaps in logical space. See Bricker (1991).
philosophical notions. This, it is supposed, is good reason to believe it true. Consider the following:

Logical space is a paradise for philosophers. We have only to believe in the vast realm of *possibilia* and there we find ... the wherewithal to reduce the diversity of notions we must accept as primitive, and thereby to improve the unity and economy of the theory that is our professional concern—total theory, the whole of what we take to be true. What price paradise? If we want the theoretical benefits that talk of *possibilia* brings, the most straightforward way to gain honest title to them is to accept such talk as the literal truth. It is my view that the price is right ... the benefits are worth their ontological cost. (Lewis 1986, p.4)

Possible worlds do provide a veritable paradise for philosophers. Lewis is right when he says that the hypothesis is serviceable. Talk of *possibilia* has at the very least clarified various modal notions, including: possibility, contingency and necessity; as well as an impressive number of other related notions including counterfactual conditional, verisimilitude, property, proposition, meaning, causation, determinism, and supervenience. Furthermore, *possibilia* provide us with the necessary tools to reductively analyse these notions; to analyse modal terms without recourse to any primitive modal component in the *analysandum*. The analysis is elegant and unified.

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3There are of course other reasons Lewis puts forward for adopting his ontology. Consider the following (infamous) argument found in Lewis (1973): “I believe, and so do you, that things could have been different in countless ways. But what does this mean? Ordinary language permits the paraphrase: there are many ways things could have been besides the way they actually are. On the face of it, this sentence is an existential quantification. It says that there exist many entities of a certain description, to wit ‘ways things could have been’. ... taking the paraphrase at its face value. I therefore believe in the existence of entities that might be called ‘ways things could have been’. I prefer to call them ‘possible worlds’.” (Lewis, 1973, p. 84). Lewis admits that this is not a knock down argument. Whatever one’s attitude towards the argument, though, at best it only provides support for tenet (i) of the ontological thesis. It does not support the interesting ontological tenets—tenets (ii) and (iii)—of Lewis’s ontological thesis.
The Lewisian hypothesis, then, has a further component. Let us call it the conceptual thesis:

THE CONCEPTUAL THESIS:

(i) The worlds are possible worlds. The worlds of which we are not a part are the other ways the world might have been; the merely possible worlds.

(ii) This world is the actual world. The other worlds are non-actual worlds. But every world is actual at itself. ‘Actuality’ is an indexical term that serves to pick out the world at which its utterance occurs.

The ontological thesis and the conceptual thesis, taken together, allow Lewis to make a series of interesting and important reductive claims. Modal statements and their cognates are to be analysed in terms of what is true at these worlds. Possibility and necessity, for example, are analysed in terms of quantification over possible worlds. The proposition that swans smoke cigars is possible iff swans smoke cigars at some world; it is necessary iff swans smoke cigars at all worlds.

These two theses, then, form the backbone of the Lewisian hypothesis. Lewis coins this hypothesis ‘Modal Realism’, but to my mind the title is hardly appropriate. It does not capture what is truly distinctive

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4Lewis also regrets the name. His reasons, though, are different to those proffered here. Lewis wants to distance himself from present day discussions of realism—discussions emanating from philosophers like Dummett. Lewis says that modal realism is not a thesis about our semantic competence, or about the nature of truth, or about bivalence, or about the limits of our knowledge. For me (him) the question is
about the program. There are realists about modality—modal realists?—that make no reference to any entities that might deserve the name 'possible world'. Such a theorist is committed to the view that there really are modal facts, but her commitment stops there.

Nor would it have done for Lewis to call his thesis 'Realism about Possible Worlds'. Such a title would have distinguished it from the thesis stated above. The name, though, is inappropriate for other reasons. The realist thesis is, according to Lewis, "simply the thesis that there are other worlds, and individuals inhabiting these worlds ... It is an existential claim, not unlike the claim I would be making if I said that there were Loch Ness monsters, or Red moles in the CIA, or counter examples to Fermat's conjecture, or seraphim" (Lewis 1986, viii). But this is nothing to write home about. Many modal theoreticians believe in the existence of worlds. Indeed, it seems to be the orthodoxy.

What is distinctive about Lewis's thesis is the claim that there is nothing exceptional about the actual world, that the other worlds are of exactly the same kind as ours. They are not only real but often concrete. Hence, Lewis advocates what might more fittingly be called 'Concrete Realism about Possible Worlds', and it is this thesis that is truly astounding.5

5Regarding this Lewis says the following; "... doubtless you will expect me to say that possible worlds and individuals are concrete, not abstract. But I am reluctant to say that outright. Not because I hold the opposite view, but because it is not at all clear to me what philosophers mean when they speak of 'concrete' and 'abstract' in this connection."(1986, p.81) While I appreciate the qualm Lewis raises here, it is enough to say that, in this context, what I mean when I say of a world that it is concrete is merely that it is of the same kind as this world. Likewise, when I say of a world that it is abstract, I mean that it is not of the same kind as this world.
A number of criticisms have been leveled against Lewis’s thesis. Most have been adequately answered by Lewis (1986). Of those that remain, I will be concerned with but one. As we have seen, Lewis is keen to follow a principle akin to Ockham’s razor, the principle that one should not multiply entities without more than compensating explanatory advantage. Ontological parsimony should be balanced against explanatory power. The objection, then, is that despite Lewis’s protestations to the contrary, he fails in this endeavor. If the objection is to have any force at all, though, we must first demonstrate that the realist’s ontological thesis is unparsimonious. Perhaps it might be thought that this premise is uncontroversial. It has, however, been controverted by Lewis. Lewis says the following:

Distinguish two kinds of parsimony: qualitative and quantitative. A doctrine is qualitatively parsimonious if it keeps down the number of different kinds of entity ... A doctrine is quantitatively parsimonious if it keeps down the number of instances of the kinds it posits ... I subscribe to the general view that qualitative parsimony is good in a philosophical or empirical hypothesis; but I recognize no presumption whatever in favour of quantitative parsimony. My realism about possible worlds is merely quantitatively, not qualitatively, unparsimonious. You believe in our actual world already. I ask you to believe in more things of that kind, not in things of some new kind. (Lewis 1973, p. 87)

Thus, a theory might be thought to be qualitatively parsimonious if it posits only particles rather than particles and fields. A theory might be thought to be quantitatively parsimonious if it posits souls for only human beings rather than souls for all animals. Lewis’s point is well taken. Qualitative parsimony is probably all that we require in our philosophical theorising. But it is doubtful that Lewis’s ontological thesis meets even this requirement.
Lewis is not only committed to a plurality of other worlds, he is committed also to a plurality of possible individuals. Lewis admits that "there are differences of kind between things that are parts of different worlds—one world has electrons and another has none, one has spirits and another has none ..." (Lewis (1986) p. 2) While the worlds are of the same kind as this world—something we are already committed to—many of the possible individuals that occupy those worlds are qualitatively distinct from anything that exists at the actual world. How many different kinds of things exist? According to Lewis, there are as many as there could possibly be. It is hard to imagine how a theory could be more qualitatively unparsimonious6

But this observation does not, by itself, pose any real threat to the Lewisian hypothesis. The envisaged objector must do something more; she must show that the compensatory analytic benefits are not enough to justify the Lewisian ontology. This is not an easy task, and will be the subject of much of this thesis. One decisive way this could be done would be to show that every single benefit that can be had by the concrete realist can be had without adopting such an unparsimonious ontology. Such a demonstration, though, seems unlikely. Lewis adopts no modal primitive in his analysis of the basic modal terms. This reductive advantage is one Lewis is keen to push, suggesting that all competing analyses are burdened with such a primitive. In the remainder of this chapter, we will see why.

This observation can't be dismissed. Our objector, then, has quite a task ahead of her. In sections 1.2 and 1.3 I will examine some alternative hypotheses that warrant contrast with the concrete realist's hypothesis. I hope to highlight their inadequacies. In the chapters that

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6This point is made by J. Melia (1992A).
follow I will develop an alternative strategy—the fictionalist strategy—varieties of which have been put forward by Rosen and Armstrong (independently of one another). I hope to show that such a strategy overcomes many of the problems associated with the approaches considered later in this chapter. But, unfortunately, the primitive modal component remains.

§ 1.2 ERSATZ REALISM ABOUT POSSIBLE WORLDS

Perhaps we can adopt an alternative less extravagant ontology that will enable us to enjoy the same conceptual benefits had by Lewis. Such is the aim of the ersatz modal realist. Ersatz realism, though, isn't a single unified thesis. Its tenets are many and varied. What unifies them is their denial of the ontological thesis, and their retention of the conceptual thesis—almost.

The ersatzer does not deny the ontological thesis outright. All ersatzers adopt an ontology of *possibilia*, and thus accept tenet (i). What they deny is tenet (ii). Possible worlds are not like the actual world. They are something quite different. Unlike the concrete world, they are abstract entities. The ersatzer will want to tell us more about the nature of these abstract entities. But it is here that opinions diverge radically. Some suggest that a world is a linguistic entity, constructions out of words in a given language. Others say that a world is a kind of picture, something like a scale model of the world. Unfortunately, still others say nothing much at all about the nature of the possible worlds—except, perhaps, to say that they are abstract simples, in need of no further analysis. One thing all ersatzers agree on, though, is that

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7The name was coined by Lewis (1973).
the worlds somehow represent the actual world. Most misrepresent it, only one represents it accurately.

If the ersatzer is an actualist, she will deny tenet (iii). Possible worlds, it will be maintained, are not demarcated spatio-temporally. Given that the ersatz worlds are abstract, it would not be unreasonable to suggest that they have no spatio-temporal location whatsoever. Thus, the parts of the worlds and the possible individuals contained therein (that is, if worlds contain possible individuals) will not bear any spatio-temporal relation to one another at all; though they will be represented as bearing such a relation. If, on the other hand, the ersatz worlds do have a particular spatio-temporal location, all possible worlds and individuals will thus be spatio-temporally related to one another.

The ersatzer need not accept tenet (iv). Many ersatzers have found reasons to reject it. For example, many religious philosophers believe that there is a necessary existent—a being that exists in all possible worlds. The ersatzer who wanted to accommodate this possibility would have to rule out tenet (iv) of the ontological thesis. Recall that Lewis’s principle of plenitude says that for any collection of individuals from any number of worlds, there is a single world containing any number of duplicates of each. If one of the numbers Lewis is quantifying over is 0, there can be no necessary existents.

There are, however, less esoteric reasons for rejecting (iv). Consider an argument against concrete realism put forward by Peter Forrest and David Armstrong (1984). Forrest and Armstrong show that there is no set, nor is there an aggregate, of all possible worlds. The argument is put by Lewis as follows:

\[\text{See, for example, Plantinga (1974).}\]
Start with all the possible worlds. Each one of them is a possible individual. Apply the unqualified principle of recombination to this class of possible individuals. Then we have one big world which contains duplicates of all our original worlds as non-overlapping parts. But we started with all the worlds; so our big world must have been one of them. Then our big world is bigger than itself; but no matter how big it is, it cannot be that. [Lewis (1986) p. 102]

Lewis avoids the paradox by modifying his principle of plenitude: tenet (iv). It is suggested that there is some unknown upper limit to the number of non-overlapping objects that inhabit the most populous worlds. Moreover, there must be some unknown geometric and topological restrictions on such objects in such worlds. Such restrictions—despite being independently motivated [see Lewis (1986) pp. 89-90]—might still seem somewhat arbitrary. The ersatzer, if she felt the need to adopt a principle of recombination at all, may quite reasonably prefer to adopt a principle that required no restrictions whatsoever.9

The ersatzer is unlikely to retain the conceptual thesis in its entirety, though she will accept something very close. Tenet (i) will be

9Whatever that alternative principle is, however, it seems likely that the concrete realist could take it on board. Consider Lewis's comments on an alternative combinatorial principle proffered by Armstrong (1989): 'The range-of-possibilities question is everyone's question. It can be framed in different ways to suit different views about the nature of possibilities; and no matter how we frame it, we can, if we like, borrow Armstrong's answer. We can say that for any way of recombining all or some of the universals that are found within our actual world, there is another 'concrete' world wherein these constituents are thus recombined; or there is an 'abstract' ersatz world that represents these universals as being thus recombined; or it is primitively possible, without benefit of any entities to play the role of possible world, that they might have been thus recombined.' [Lewis (1992) p. 211]. It seems to me, then, that while some principle of recombination may be required to determine the range of possibilities, the principle one finally selects will be available to all. We might conclude, therefore, that tenet (iv) of the ontological thesis is inessential to the concrete realist's hypothesis. Moreover, the Forrest-Armstrong objection is not so much an objection to concrete realism, but rather any modal theorist who adopts the unrestricted principle to specify the range of possibilities.
conceded without modification. Tenet (ii), on the other hand, is a little more worrying. The ersatzer invariably asserts that everything is actual. Thus, there are no non-actual worlds. Modal statements are analysed in terms of quantification over these actual worlds. But there is one and only one such world that accurately represents the concrete world, it alone is actualised. All other worlds are unactualised. The ersatzer will have to distinguish between the one and only concrete world and the one and only accurate representation of the concrete world. Which one is picked out by 'the actual world' will be important, and the conceptual thesis advocated by the ersatzer will have to make that clear.

The ersatzer can adopt something like the indexical analysis of actuality proposed by Lewis, thus distinguishing her semantic thesis from her metaphysical thesis. She might well suggest that actuality is a property possessed by each world at itself; that every ersatz world is actualised according to itself; that each ersatz world is such that it represents itself as correctly representing the actual world. But, as Lewis [1986, p. 138] points out, relative actuality and actualisation will always be accompanied by absolute actuality and actualisation. On any such theory there will be one world that is actualised absolutely; one world that does not misrepresent itself as accurately representing the concrete world. The ersatzer can therefore draw an important distinction between the ontological status of that world and the others.10

10See Hazen (1979) and Stalnaker (1987, for a discussion of the metaphysical and semantic theses about 'actuality'.
Lewis mounts a concerted attack against the various forms of ersatzism. A variety of objections are made, but one problem faces them all: the ersatzer must invoke a primitive modal component in her explication of the term ‘world’. Lewis spends over a quarter of his book *On the Plurality of Worlds* discussing the objection. Let me outline some of the worries Lewis raises there.

Consider first linguistic ersatzism. It maintains that possible worlds are something like maximally consistent sets of sentences which offer descriptions that serve as alternative proper descriptions of the actual world. Given that there are inconsistent sets of sentences, we need a primitive understanding of consistency to distinguish the sets of sentences that count as worlds from those that don’t. Unfortunately, consistency is also a modal notion. A set of sentences is consistent iff all of its members could be true together.

Consider next pictorial ersatzism. It maintains that possible worlds are a kind of model of the world. They represent possibilities by ‘picturing’ them. If world pictures are to represent the world precisely, though, they must represent it isomorphically. But, it should be asked, isomorphic with what? They cannot be isomorphic with the actual world, else all worlds would represent the same possibility. It seems the best we can say is that if the concrete world *had been* such and such a way, then some pictorial world *would have* represented it. But that is itself a modal claim.

Furthermore, it would seem that the pictorial ersatzer cannot rid herself of unwelcome ontology. Pictures represent by having much in common with what they represent. The more precise the representation is, the closer our ontology is to that adopted by the realist.
Finally, consider magical ersatzism. The magical ersatzer gives no account as to how possible worlds represent. Possible worlds, according to this view, are abstract simples. Instead of representing possibilities by possessing a determinate structure, magical worlds represent by being related to the concrete world in some way.

Lewis’s criticism of magical worlds focuses on the nature of that relation: is it an internal relation, or an external relation? If the relation is internal, the magical world represents some possibility because it possesses some relevant intrinsic property. However, the sort of property in question must be a curious one: magical worlds, ex hypothesi, have no determinate structure. Every magical world, it will be suggested, has the property of representing a unique possibility primitively. Magical worlds are thus intrinsically representational entities. While there is nothing incoherent in this idea, it is unclear how we could be more familiar with such representational facts than the basic modal facts.

The consequences are even worse if we suppose that the relation between the concrete and a magical world is an external one. The relation would hold between some magical world and the concrete world by virtue of no intrinsic properties of either the magical world or the concrete world. But if the intrinsic properties of these worlds are irrelevant to what possibilities they represent, it seems that any old world could do the job. It is the role played by the world that is important, not the world itself. But what role could that be, if not a modal role?

There is of course much more to be said about these and other ersatz theories. Lewis himself does this admirably. The point, though, is that
the ersatzer is hard pressed to put forward an alternative ontological thesis that is free of modal primitives. But if the ersatzer's ontological thesis contains such primitives, her conceptual thesis is not going to be reductive.

It should be noted, however, that the presence of a primitive modal component in one's analysis of modal notions is not a decisive objection to ersatzism. The ersatzer's hypothesis is not circular. As we have already seen, possible worlds are crucial to our analysis of a wide variety of important philosophical notions—for the ersatzer as well as the realist. The ersatzer, like the concrete realist, can analyse the following notions in terms of possible worlds: counterfactual conditional, verisimilitude, property, proposition, meaning, causation, determinism, and supervenience. It is true that the ersatzer cannot reduce the modal to the non-modal. But such analyses are by no means a trivial philosophical achievement.

Lewis's objection to ersatzism, though, is not that the analyses are circular, but rather that they are not thoroughly reductive. Ersatzism doesn't have quite the same explanatory power as modal realism. Whether or not you think the improvement in ideology is worth the ontological cost is, of course, a matter of opinion and taste. But if we are looking for a decisive counter to modal realism, we should look beyond the halfway house offered by the ersatzer.

§ 1.3 ANTI-REALISM AND AGNOSTICISM ABOUT POSSIBLE WORLDS

Those who have qualms about the Lewisian ontology, then, have some motivation to look elsewhere for a solution to their problem.
Perhaps a more natural response would be to deny outright that worlds, concrete or abstract, exist. Let us follow Forbes, and call such a position anti-realist. Forbes elaborates:

An anti-realist says that worlds do not exist, and thus he is an actualist of a more radical kind than any reductive realist. For an anti-realist, any possible worlds sentence which has an existential quantifier over worlds as its main connective must be strictly and literally false ... So the anti-realist ... cannot say that possible world sentences exhibit the real meanings of modal sentences in a peculiarly perspicuous way. (Forbes (1985) pp. 75-76)

It is important to note that Forbes's articulation of the anti-realist thesis is not merely intended to be a denial of the ontological thesis, a rejection of an ontology of worlds. Consider a position that might intelligibly be held by a fatalist. The fatalist might agree that there are no worlds other than the one of which we are a part. She might still maintain, though, that modal statements are to be analysed in terms of quantification over worlds. This world is indeed the actual world, but because there are no others, actuality, possibility and necessity are conflated. Such a theorist is not an anti-realist in the sense prescribed above.

In addition to her denial of the ontological thesis, the anti-realist will deny the conceptual thesis, suggesting that modal notions and their cognates can be analysed adequately without making any literal reference to possible worlds. Many of the advantages of possible world talk, it is maintained, can be had without the ontological cost. Paradise for nothing? That would be nice! If the anti-realist could achieve this goal, Lewis's motivation for adopting the ontological thesis would be undermined.
Like the ersatzer, the anti-realist will not deny the ontological thesis entirely (though she will take issue with the realist at entirely different junctures). She will of course deny tenet (i), that other worlds exist. Tenet (ii), suitably interpreted, says that all the worlds there are, are of the same kind as this world. Given that the anti-realist accepts that this world is a world, tenet (ii) is trivially true. She will also accept tenet (iii). If this world does not consist of spatio-temporally disconnected regions, (iii) is true. Given her attitudes to tenets (i) - (iii), it follows as a consequence that the anti-realist will deny tenet (iv).

Having spelt the anti-realist's thesis out in this way, though, we have good reason to suspect that the thesis is far stronger than it need be. To see this, consider an objection to concrete realism put forward by Peter van Inwagen (1985). Van Inwagen argues that even if we were to admit that worlds exist, even if we were to admit the entirety of the ontological thesis, Lewis would still “face the problem of explaining what these worlds would have to do with modality if there were any of them” (p. 119). Lewis responds, quite rightly, by reasserting his conceptual claim.

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11The anti-realist is in no position to deny tenet (ii). She may of course use the term ‘world’ in a different way, perhaps to ‘refer’ to some non-existent abstract entities, but Lewis is perfectly entitled to stipulate what he means by the term. The anti-realist is in a position only to assert that there is not a plurality of such entities.

12It might be thought that it is possible for the anti-realist to accept (ii) and yet not accept (iii). But it seems to me that Lewis states his position a little too weakly. Lewis never defines what he means by the term ‘world’, preferring to take it as a primitive. But he could define a world (and his view often seems to require it) as a maximally extended region of continuous space-time. Thus, tenets (ii) and (iii) could be replaced with this one principle. As a consequence, I take (iii) to be a kind of analytic truth. Thus, the kind of anti-realism mentioned above would instead be a kind of agnostic.

I do not mean to suggest, however, that someone who took issue with Lewis’s conception of a ‘world’, and yet felt that there are abstract entities that (closely enough) fill the role Lewis hopes his spatio-temporal regions fill, would be an anti-realist. An anti-realist must deny that there are any appropriate entities that could be quantified over in our explication of modal notions. Hence her denial of the conceptual thesis.
This spurious problem for Lewis, though, is paralleled by a genuine problem for the anti-realist. As we have seen, the anti-realist denies that there are worlds. In doing so, she thereby denies that there are entities which lie outside our spatio-temporal limits. Forbes even goes so far as to suggest that the anti-realist “will hold the non-existence of worlds to be necessary” (Forbes (1985) p. 76; my italics). But what possible reason has she for doing this given that she holds that such worlds are explanatorily impotent?\textsuperscript{13} Recall that the anti-realist denies the conceptual thesis. The all-important connection between the ontological thesis and the conceptual thesis has been severed. Thus, the existence or non-existence of worlds is just irrelevant to her modal analysis. But this fact does not give us any reason to deny that other worlds exist. Einstein’s general theory of relativity permits space-times with disconnected regions. There is no further scientific evidence presently available to us that could convince us of either their existence or non-existence. Nor is there any principled way of ruling out their existence \textit{a priori}. The anti-realist’s staunch denial of their existence, then, seems ungrounded.

There is a more natural alternative to anti-realism that may suffice for those who have qualms about a possibilist ontology, an alternative that makes no unnecessary assertions about the non-

\textsuperscript{13}There are, of course, philosophers who believe that it is both necessary and \textit{a priori} knowable that there are no disconnected spatio-temporal regions; and thus that there are no other worlds. See, for example, Kant’s \textit{Critique of Pure Reason}, and, for a more guarded defense of this thesis, Rosenberg (1989). Unfortunately, though, I have found no arguments for accepting this thesis, and many good reasons for denying it. Is Forbes to be included among such company? Perhaps not. One could judge Forbes’s assertion a little more charitably if we were to take him, not unreasonably, to adopt something like the Wittgensteinian maxim: the world is everything that is the case. It is, of course, necessary that there could not have been anything other than everything there is: $\neg \exists \exists y (\forall x (Ey \rightarrow x = y))$. Forbes may feel more comfortable with varieties of agnosticism if we were to restate the ontological thesis in such a way that it was clear that by ‘world’ we meant something like ‘maximally extended region of space-time’.
existence of worlds. It might aptly be called agnosticism about possible worlds. The agnostic, like the anti-realist, will deny the conceptual thesis in its entirety. The agnostic's attitude towards the ontological thesis, though, is different. Tenets (ii) and (iii) will be accepted\(^{14}\). But unlike the anti-realist, the agnostic will not deny tenets (i) and (iv). She is prepared to withhold judgment here. She recognises that we have no non-question-begging reason for denying any tenet of the ontological thesis. The agnostic's thesis is compatible with the existence of other worlds and individuals. But if they exist, their existence is just irrelevant to any claims we might make about the merely possible.

Thus the anti-realist and the agnostic about possible worlds both adopt a modest ontology, far simpler than that adopted by any reductive realist considered above. Before we can assess the merits of such a proposal, though, the anti-realist and agnostic owe us some account of the nature of modality. Given that they both deny the orthodox conceptual thesis, they are under some obligation to spell out an alternative, if they have one.

Perhaps they have no alternative. Such a theorist, let us suppose, will refuse to analyse modal terms (like possibility, necessity and contingency) at all, preferring instead to take at least one as primitive and defining the others in terms of it. Such a position has often been called 'modalism'. [See, for example, Forbes (1985) and (1989)].

\(^{14}\)Tenet (iii) will be accepted without question if we are to accept at face value the stipulation in footnote 12—implied in Lewis (1996)—that worlds are maximally extended regions of space-time. There are reasons the agnostic might suspend judgment here, however. See § 4.3 for a discussion of the issues that might give rise to an agnosticism about (iii).
According to the modalist, there are modal facts. There are true propositions that make reference to these modal facts. These modal facts cannot be reduced or further analysed. Modalism is the view that modal operators provide the fundamental means of expression of modal facts. It is to be contrasted with the doctrine that modal operators are to be analysed as involving quantification over possible worlds. The position, it will be noticed, is compatible with both anti-realism and agnosticism about worlds.

Now it should be clear that modalism is not ideologically on a par with modal realism. The modalist's language requires modal primitives; the concrete realist's does not. But is not one modal primitive a fair price to pay for no ontology of worlds whatsoever? Only if there are no natural modal idioms—expressible in the language of possible worlds—that elude translation into the modalist's language. As is well known, there are such idioms. Such idioms provide us with a decisive objection against those who adopt an austere modal language—a language whose modal operators are merely '□' and '◊'.

Consider first some examples offered by Allen Hazen (1976) and Cressley and Humberstone (1977):

(i) There could have been more things than there actually are.

(ii) It is possible that everything that is actually red is shiny.

(iii) Necessarily, something actual exists.
Such sentences are expressible in the language of possible worlds. (ii), for example, is translated as follows:\textsuperscript{15}

\[(ii^*) \forall x (R_x \rightarrow \exists w (I_{xw} \& S_x))\]

A little reflection reveals that there is no corresponding translation in the modal language under consideration. Consider the following:

(1) $\Diamond \forall x (R_x \rightarrow S_x)$

(1) says that it's possible that all red things are shiny. But that's not an adequate translation of (ii) because that could be true in a world in which the actual things weren't red.

(2) $\forall x (R_x \rightarrow \Diamond S_x)$

(2) says that all red things are such that they might be shiny. But that's not an adequate translation of (ii) because that could be true just in case the red things are all shiny at some world, but never all at the same world.

(3) $\forall x \Diamond (R_x \rightarrow S_x)$

(3) says that all things are such that it's possible that if they are red, they are shiny. But that's not an adequate translation of (ii) because (3) could be true if for any actual object, it's possible that it's not red; if, for any actual object, there is a world at which it's not red.

\textsuperscript{15}Like Hazen, I have assumed that there are individuals in more than one world. It should be noted, though, that by making the translations a little more complicated—phrasing them in terms of Lewis's counterpart theory—there are in fact additional sentences that can be formulated that have no modal counterpart. See Hazen (1976) \textit{footnote 1}. 
Such examples might tempt us to supplement our modal language so as to include a new operator ‘A’ to correspond with the English modifier ‘actually’. Such an extension would considerably increase the expressive power of the language. All three propositions stated above would have a translation in the new modal language. (ii), for example, would be translated as follows: $\Diamond \forall x (A R x \rightarrow S x)$.

But this, perhaps natural, addition does not save the modalist from her woes. Unfortunately, there are an impressive number of further problem expressions; sentences expressible in the language of possible worlds, yet inexpressible in this extended modal language. I do not intend to review these cases here. Instead I want to consider a different kind of example, an example of my own that elludes translation in the modal language under consideration.

Consider the following sentence:

(iv): Every possible thing is such that if it were red, it would be shiny.

Sentence (iv) seems to require quantification over possible individuals. Not only does the sentence make perfect sense, it seems that it may also have some philosophical utility. The problem of analysing laws of nature has been something that has perplexed philosophers since the time of Hume. Laws of nature are a kind of

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16 See Crossley and Humberstone (1977) and Davies (1985) for the syntactic and semantic features of the actuality operator.

17 I refer the interested reader to Hazen (1976) and Lewis (1986) for further examples. An attempt to provide the appropriate extensions to express such sentences is given in Forbes (1985) & (1989) and Peacock (1978). For a critique of such extensions see Melia (1992B).

18 It was only after writing the greater majority of this thesis that I became aware of Ratzsch’s (1988) paper, in which there is an extended discussion of some of the issues raised in the remainder of this section. It is unfortunate that I have not had the time to incorporate any of that material here. Ratzsch’s main interest, however, is giving an account of natural law.
regularity, captured by a special kind of universal generalization. The
problem for philosophers concerned with giving an analysis of laws of
nature is how to distinguish between accidental regularities and law-
like regularities. One plausible account—an account that has been
mooted by many philosophers19—is that an accidental regularity is
true merely by virtue of an appropriate quantified material conditional
holding. A law-like regularity, on the other hand, is true by virtue of a
quantified subjunctive conditional holding. (iv), according to this
account, would entail that 'All red things are shiny' is a law of nature.

Sentence (iv) translates easily into possible world talk if we are
permitted to quantify over possible individuals as well as possible
worlds. (I am assuming that individuals can be in more than one
world to avoid complicating matters. The point would be the same,
however, if we adopted some form of counterpart theory instead. See
footnote 15). Somewhat roughly, we might translate it as follows:

For any possible individual x and any possible world w at which
(Ixw & Rx & ~Sx), there is a closer world w* to @ at which that x is
such that (Ixw* & Rx & Sx).

The modalist is going to have an awfully hard time paraphrasing this
into her language of boxes and diamonds. For one thing, she is going
to need to add a primitive counterfactual ('□→') to her language.
Consider it done. That still won't help her in the endeavor to translate
(iv). Consider the following plausible candidates:

19See, for example, Hemple (1950), Goodman (1955), Stalnaker (1968), Suppe (1977)
and Ratzsch's (1988).
(1) \( \forall x (Rx \square \rightarrow Sx) \)

(1) says that everything is such that if it were red it would be shiny. 

(iv), on the other hand, says that the counterfactual is true of every possible thing. But (1) could be true even if there is a merely possible \( x \) such that if it existed, it would be red and not shiny.

(2) \( \Box \forall x (Rx \square \rightarrow Sx) \)

(2) says that it is necessary that everything is such that if it were red, it would be shiny. While (1) was too weak to be a translation of (iv), (2) is too strong. This sentence is equivalent to \( \Box \forall x (Rx \rightarrow Sx). \) But we want to allow that \( \exists x (Rx \& \neg Sx). \)

(3) \( \forall x \Box (Rx \square \rightarrow Sx) \)

(3) says that everything is such that it is necessary that if it were red, it would be shiny. Unfortunately, (3) goes doubly wrong. First, (iv) quantifies over non-actual individuals, (3) does not. Second, (iv) allows that \( \exists x \Box (Rx \& \neg Sx); (3) \) does not.

(4) \( \forall x ((\Box Ex \rightarrow (Rx \square \rightarrow Sx)) \)

(4) says that everything is such that, if it's possible that it exists, then if it were red, it would be shiny. But (4) is equivalent to (1). Everything is such that it possibly exists: \( \forall x (Ex \rightarrow \Box Ex). \) Thus, (4) can't be an adequate translation of (iv).

(5) \( \Box \forall x \exists (Rx \square \rightarrow Sx) \)

This translation is certainly the best of the five. To take advantage of this sentence, we are of course required to further augment our

\[ A \text{ proof appears in Chapter 3, § 4.} \]
language with an actuality operator. But that's not so bad, given that we already have some independent motivation for adopting it. (5) says it is necessary that everything is such that it is actually the case that if it were red, it would be shiny. It certainly gets the truth conditions right. But such a maneuver isn't going to be of much help in the long run. The trouble will have merely been located elsewhere. The modalist is still going to have a hard time translating sentences like: it is possible that every possible thing is such that if it were red, it would be shiny.21

To conclude: the modalist, with only the two standard modal operators at her disposal ('O' and '□'), is in bad shape. She will, on the whole, be able to translate the realist's talk of possible worlds in terms of her standard modal operators. But not all the time. Hazen and Lewis show us that she will have trouble when the realist makes cross-world comparisons. What I hope to have shown is that this is not the only area of concern for the modalist. Sometimes, when talk of possible worlds is not enough, we need to quantify over possible individuals. Such talk, I maintain, is supported by ordinary language.

The modalist, however, is in strife if she needs to paraphrase such talk. If the realist can't just quantify over worlds in such cases, it seems unlikely that the modalist could get away with using only the standard modal operators. She may, as in all such cases, provide some suitable extension to her language. But such a proliferation of primitives is undesirable. We will have come a long way from the ideological paradise we started the chapter with.

21One might suspect that Forbes (1985) & (1989) and Peacock (1978) have provided the necessary extensions to our austere modal language to solve this problem, in addition to the more general problems presented by Lewis and Hazen. For a critique of such extensions, I refer the reader to Melia (1992B).
Thus, if the agnostic (or, indeed, the anti-realist) about other worlds is not only sensible about her ontology, but attentive to her ideology, she will adopt a substantive alternative conceptual thesis to that offered by the realist. But what could such a conceptual thesis amount to? One answer to this question will be offered in the remainder of this essay.
CHAPTER TWO

VARIETIES OF FICTIONALISM

§ 2.1 MODAL FICTIONALISM

Fictionalism is not a new metaphysical thesis. Hartry Field (1980) is a fictionalist about numbers. Bas van Fraassen (1980) is a fictionalist about scientific entities. Daniel Dennett (1987), on some interpretations, is a fictionalist about beliefs and desires. Somewhat roughly: a fictionalist about a certain theory $T$ says that $T$ is a fiction; the entities postulated by $T$ are only fictitious entities. Despite this, though, it is maintained that $T$ has a certain utility that justifies our adoption of the framework—we behave, and should behave, as if the theory were true.

Let me distinguish two kinds of fictionalism: strong and weak fictionalism. Both agree that the theory has a kind of utility. The strong fictionalist, though, will say that $T$ is literally false. Some, perhaps all, entities postulated by $T$ do not in fact exist. A weak fictionalist, on the other hand, makes no claim regarding the ontological status of the entities postulated by $T$. Fictionalism, it will be suggested, is compatible with realism. The weak fictionalist and the strong fictionalist will, of course, differ with regard to the importance they attach to some questions. What unites them both, however, is the contention that an adequate explanation of that which is analysed does not depend on either the truth or falsity of the theory, or the existence or non-existence of the entities postulated therein.

In recent times a number of philosophers have put forward and defended a fictionalist interpretation of the possible worlds framework:
modal fictionalism. As one might expect, the principal idea is that possible worlds and possible individuals are useful but fictitious entities. *Possibia*, it is suggested, do not (or need not) exist *simpliciter* but do exist according to some fiction.

Although the modal fictionalist's position might seem a sensible and straight-forward one to hold against Lewis and others, the idea has only recently been given an extended and detailed treatment. David Armstrong (1989) and Gideon Rosen (1990) stand alone, having each defended their own variety of fictionalism about possible worlds.¹

Modal fictionalism, like fictionalisms generally, comes in two varieties: weak fictionalism and strong fictionalism. The difference between the two kinds of fictionalists can be captured by their attitude towards Lewis's ontological thesis (see chapter 1, page 4). Both accept tenets (ii) and (iii). The strong fictionalist denies tenets (i) and (iv). The weak fictionalist, though, reserves judgment here. The strong fictionalist is an anti-realist about possible worlds; the weak fictionalist is an agnostic about possible worlds.

This essay can, for the most part, be taken as a defense of either form—strong or weak—against the realist. At certain junctures, though, the distinction will become important and at such junctures I will endeavor to bring out the differences between the two theses; to point to the advantages and problems had by one view but not the other. It should, however, already be clear that I advocate a variety of *weak* fictionalism.

The fictionalist's conceptual thesis differs significantly from the realist's. Her analysis of modal claims will depend on the content of

¹They are not alone in their belief, however. Hartry Field (1990), for example says explicitly that "in my [his] view, possible worlds are just fictions". (p.41). As Field says nothing more on the topic, it would be difficult to examine and assess his claim.
some story—perhaps a set of postulates that have never been written down—rather than the ways the worlds are. Her hope, then, is to inherit many, if not all, of the benefits of possible world talk, without the ontology associated with such talk. Whether or not the fictionalist succeeds in this goal will depend on how she fleshes out her conceptual thesis. As we shall see, there is a lot of room to differ on the details.

Before critically examining the differences between the conceptual and ontological theses adopted by Armstrong and Rosen, it is worth noting one advantage the modal fictionalist has over other fictionalists. A fictionalist about scientific entities, or numbers, or beliefs and desires will say that $T$ (the theory that postulates them) is unlike literary fictions in that it is a very useful story. How is it useful? It is useful in predicting certain actual phenomena in the world. Presumably, then, these theoretical entities are to be evoked in some sort of causal explanation. This presents a difficulty for the fictionalist. If $T$ provides the most useful way of predicting certain phenomena, and it postulates certain entities that are doing some causal work (or are involved in a causal explanation), then it seems that it would be unreasonable not to accept that the entities exist.

Perhaps the problem can be resolved. Maybe one could point towards a way of eliminating the entities postulated by $T$. Perhaps, if one is agnostic about the existence of such entities, it will be pointed out that there could be other entities which will explain the phenomena equally well. The problem, though, is not one that is faced by a fictionalist about possible worlds. The reason is simply that possibilia do not causally interact with the actual world; nor do they
help us make predictions. Their usefulness is not located in causal explanation. They are a conceptual tool. I take it that this is an important point in favour of modal fictionalism.

Not only does modal fictionalism side-step a prima facie difficulty encountered by many other kinds of fictionalisms, it also avoids a similar problem faced by the concrete realist. Common sense adheres to the principle that physical or concrete entities should be postulated only if there is some empirical evidence for their existence. Like any other corporeal entity, one could discover the existence of other concrete worlds by a posteriori means only. Usefulness might be a good criterion for deciding how to furnish our kitchen. It should not be a consideration when deciding on the furnishings of our ontology. The modal fictionalist, unlike the concrete realist, is sensitive to this intuition.

There are, however, a number of problems for the modal fictionalist that have already been raised in the literature. It is my contention, though, that the trouble does not end there. In this chapter I aim to critically examine the two most prominent varieties of fictionalism—Rosen's and Armstrong's. I raise what I take to be two new problems for the whole approach. The fictionalist's analysis, it seems, does not obey a simple but important principle of substitutivity. The problem arises in modal contexts. The second and more worrying difficulty takes the form of a dilemma: either the fictionalist is committed to an ontology of worlds, in which

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2Thanks to Rae Langton for making this point.
4Since writing this chapter, it has come to my attention that Gideon Rosen has, quite independently, hit upon the second problem—the problem of ontological commitment. Compare Brock (1993) and Rosen (1993).
case she is a modal realist of sorts, or else her language inherits a plurality of modal primitives and hence would provide no real analytic advance on a theory that simply takes the standard modal operators as primitive.

§ 2.2 ROSEN'S FICTIONALISM

In a recent paper, Gideon Rosen (1990) proposes and defends a view in which the modal analysis depends on a fiction of many worlds. It is admitted that there is a wide variety of fictions according to which there exist a multiplicity of possible worlds. The fictionalist is free to choose from any of them, so long as it is one in which the usual claims about possible worlds are true. Rosen takes Lewis's fiction and works with it. Hence, Rosen is a concrete fictionalist.

Rosen's ingenious proposal is to exploit an analogy with standard accounts of a general analysis of truth in fiction. Statements like 'There is a ghost that haunted Heathcliff on the windy moors' and 'There are possible worlds other than our own' are true but not true simpliciter. They must implicitly be understood as elliptical for longer sentences explicitly about a story. The reason we assent to their truth is because the context of utterance is such that they can only be interpreted as sentences beginning with a silent sentential operator, 'according to such and such fiction ...'. Thus, we are not committed to

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5Rosen's fiction does, however, differ from the Lewisian hypothesis in a number of important respects. For reasons of clarity, the hypothesis is modified in such a way as to eliminate any modal vocabulary: "The postulates are all theses about what there is, not what there must or might be." (p.334) Moreover, the postulates are added to; supplemented with an encyclopedia of non-modal facts about the intrinsic nature of this world. Using the encyclopedia together with our fiction, we may, using some principle of recombination, determine what is contained within the other worlds.
the existence of any entities embedded therein, despite an appearance to the contrary.

Once the operator has been recognized, Rosen claims that we are in a position to see how useful it is. By treating the realist's thesis as a fiction, the fictionalist can analyse a wide variety of modal claims cashing in on the realist's analysis. For example, a fictionalist can say that it is possible that there are blue swans iff according to the hypothesis of a plurality of possible worlds (PW), there is some world containing blue swans. To be sure, we can, as Rosen does, put the proposal more generally:

... let $P$ be an arbitrary modal proposition. The modal realist will have ready a non-modal paraphrase of $P$ in the language of possible worlds; call it $P^*$. The realist's assertions about possible worlds are guided by explicit adherence to the schema $P$ iff $P^*$. The fictionalist's parasitic proposal is therefore to assert every instance of the schema: $P$ iff according to the hypothesis of the plurality of worlds [PW], $P^*$. Like modal realism, the theory would seem to provide truth conditions for modal claims in a systematic way. (Rosen 1990, pp. 332-3)

Thus, it would appear, the fictionalist can help herself to the possible worlds framework without presupposing an ontology of worlds. Nice work, if she succeeds.

Rosen considers, in some detail, a number of problems for the thesis. It is my contention, though, that there are additional problems which have not been considered, problems that are far more damaging to the program.

THE SEMANTIC PROBLEM
With the help of PW, Rosen hopes to provide an analysis of much of our modal language. Presumably it is intended that the analysis obey
some principle of substitutivity: if $P$ is some arbitrary modal claim, and $P^*$ is the fictionalist's paraphrase of $P$, it should be possible—in the right context—to substitute or replace any occurrence of $P^*$ with the corresponding modal claim. Moreover, it should be possible to do the converse, to substitute any occurrence of $P$ with the fictionalist's paraphrase $P^*$. Perhaps the principle will not hold in all cases, but it is essential that it hold at least in modal contexts.

Does Rosen provide such an analysis? It is difficult to tell given that he considers only the most elementary modal claims. But if we probe further, and consider some of the iterated modalities, difficulties begin to emerge. Consider the fictionalist's paraphrase of the modal claim '$\Diamond p$: According to PW, some (accessible) world is a $p$ world. Now consider the more complex formula '$\Box \Diamond p$'. The requirement that the principle of substitutivity hold in modal contexts commits the fictionalist to the equivalence of this formula and the following: according to PW, all worlds are such that (according to PW, $p$ is true at some world). Not only is the analysis messy, it doesn't give the truth conditions accurately.

Notice that the (bracketed) embedded formula is within the scope of the operator 'according to PW.', and consequently should be a paraphrase of the realist's analysis of '$\Diamond p$'. It is not clear that this is the case, however. The realist will assert that if there are worlds in which $p$ is the case, then it is possible that $p$, even if it is not stipulated by PW that there is such a world. The truth conditions for modal statements are given in terms of worlds rather than a theory. As the two may come apart, the realist will not assent to the paraphrase proffered above by the fictionalist.
To illustrate this point, it is worth drawing an analogy with general works of fiction, particularly when the modal fictionalist herself is allegedly drawing on the analogy. Consider the proposition that according to the novel *Wuthering Heights* there is a ghost that haunted Heathcliff on the windy moors. This proposition is true, but it does not entail the proposition that according to the novel *Wuthering Heights* (it is true that) according to the novel *Wuthering Heights* there is a ghost that haunted Heathcliff on the windy moors. This proposition is plainly false. There is no reference to the novel *Wuthering Heights* within the novel *Wuthering Heights*.

Now consider again Rosen's analysis. The realist does not analyse $\Box \Diamond p$ as 'all worlds are such that according to $PW$, $p$ is true at some world' as Rosen would have us believe. This would not be a problem if it could be shown that the locution is equivalent to the realist's. Unfortunately for Rosen, though, it couldn't be. To see this, consider an example Rosen himself gives in a different context. Rosen considers the modal claim that there might have been $\kappa$ non-overlapping physical objects:

... Lewis holds that there must be an upper bound $\kappa^*$ to the number of non-overlapping physical objects that inhabit the most populous worlds ... Yet we do not know what this upper bound is; and for all we know, even if we were fully informed about the empirical character of our universe we might still have no insight into this global aspect of the totality of universes. Thus for the realist, this modal claim has a definite truth value; but we cannot say what it is. (Rosen 1990, p.341)

What we should notice here is merely that the realist's thesis $PW$ is silent with regard to the truth-value of this special modal proposition. Whether or not it is true depends on whether or not
there is a world containing $k$ non-overlapping physical objects. It does not depend on whether or not the hypothesis stipulates or implies that there is such a world. Hence, what is true at a world, and what is true according to $PW$ at a world, are not equivalent. The paraphrase proffered by Rosen is not a paraphrase of the realist's view. Thus, the analysis of propositions involving iterated occurrences of modal operators is simply false.

A fictionalist might, of course, suggest that we should not introduce the operator 'according to $PW$' whenever we see a quantifier over worlds. Rather, it is designed to be introduced as a one off-prefix to a sentence containing such a quantifier. So the problem does not arise. The response is a reasonable one, but it comes at a cost. The substitutivity principle is denied. This may not be enough to defeat the program, but it is certainly a defect that cannot be ignored.

THE ONTOLOGICAL PROBLEM
The main motivation for going fictionalist about possible worlds, as we have seen, is ontological simplicity. The fictionalist allegedly has the obvious advantage of not presupposing an ontology of possible worlds. It is my contention, though, that Rosen seems forced to admit that possible worlds do in fact exist. In order to see why, consider first the proposition that $2 + 2 = 4$. The proposition is necessarily true and the fictionalist will give the truth conditions in the following way:

It is necessary that $2 + 2 = 4$ iff according to $PW$, at all worlds, $2 + 2 = 4$.

We should notice two things:
(i) The fictionalist is committed to the view that the proposition on the left hand side of the formula affirms a modal fact, a *real* modal fact. This is because the proposition on the right hand side of the formula affirms a real fact, a fact to the effect that a story has a certain content. Furthermore, if we use the standard modal axiom '\( \Box p \supset p \)' we can derive the non-modal fact that \( 2 + 2 = 4 \).

(ii) The proposition on the left hand side of the formula does not quantify over worlds. Quantification over worlds does occur on the right hand side of the formula, but the quantifier occurs within the scope of the fictionalist's prefix and therefore is not existentially committing:

The trouble comes when we consider a proposition like 'There is a plurality of possible worlds'. The fictionalist *should* say that it is false. The realist, on the other hand, will not only say that it is true, but that it is true *necessarily*. Let's see why.

(i) Most of us agree that there are other ways the world might have been. The realist, though, says something more: every way the world might have been is a way that some world is.

(ii) Because the accessibility relation between worlds is both reflexive and symmetric, *according to PW*, the proposition that there is a plurality of possible worlds is true at all worlds.

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6It might be thought that the fictionalist has a problem countenancing this inference. It is difficult to see how a fiction would imply anything about actuality. Rosen's fiction, though, is a fiction of many worlds, among which the actual world is one. What is true at all worlds in the fiction, then, must be true at the actual world.
The fictionalist, then, has a problem. Consider the following:

It is necessary that worlds exist iff according to \( PW \), it is true at every world that worlds exist.

It has already been established that the right hand side of the formula is true. Thus, if the fictionalist’s analysis is correct, the left hand side of the formula will also be true. This is not a good consequence for the fictionalist. By using the axiom ‘\( \Box p \supset p \)’ we can derive the non-modal proposition that worlds exist. The fictionalist, it seems, is committed to an ontology of worlds.

The fictionalist could of course modify his analysis so as to rule out an analysis of propositions which prove difficult. For example, the fictionalist might say the following: \( P \) iff according to \( PW, P^* \), except where \( P \), and therefore \( P^* \), embed a proposition about worlds. Such a proviso certainly seems ad hoc. Perhaps the analysis could be defended from this charge. After all, propositions about worlds cannot be seen as part of our ordinary language. They are introduced only as instrumental devices and therefore are not, and should not, be analysed in the usual way.

Once we have introduced the notion of a world into our analytic discourse, though, sentences of the form ‘Necessarily worlds exist’ will presumably have some meaning; it’s just that the fictionalist will want to say that they are false. According to the fictionalist’s analysis, the truth conditions for modal statements about worlds, unlike other modal propositions, will not depend on the content of \( PW \).
Such a restriction would, however, seriously undercut the analytic advantage of the program. It's easy to avoid any ontological commitment to worlds; just adopt a primitive modal language. The alleged advantage fictionalism has over primitive modal languages is its reduction of a wide variety of modal primitives to one.\(^7\) Once such ad hoc restrictions are placed on the program, though, the primitives are multiplied. One is left wondering if it would not be better merely to take the more conventional modal operators as primitive.

To illustrate, consider two further arguments:

(i) Consider the subjunctive conditional 'If it were the case that \(p\), then it would be the case that \(q\)' (\(p \Box \rightarrow q\)). According to a realist like Lewis, this is true at a world \(i\) if and only if some \(p \& q\) world is closer to \(i\) than any \(p \& \neg q\) world (if there are any \(p\) worlds). Assume further that \(p\) is any proposition true at the actual world, and that \(q\) is the proposition that worlds exist. The actual world, then, is a \(p \& q\) world according to the realist. Because the actual world is closest to itself, the thoroughgoing fictionalist should say that the subjunctive is true. Thus, the proposition that worlds exist is a consequence of the fictionalist's analysis of subjunctives.

(ii) Consider the following strict implication: \(p \land \neg q\). According to the realist, this is true if and only if all \(p\) worlds are \(q\) worlds. Assume again that \(p\) is any true antecedent and that \(q\) is the proposition that...\(^7\) Rosen allows that his analysis inherits a primitive modal component. The fictionalist's operator—according to PW—is classed as a modal operator. Unlike the realist, then, the fictionalist has not "analyse(d) all modal locutions in non-modal terms ... what he has done ... is reduce a wide variety of modal notions to this one. Now this may not seem as impressive as a thoroughgoing eliminative reduction. But it remains a non-trivial analytic advance. No similar claim can be made, for example, by those who take the logician's standard modal operators as primitive"(pp. 344-5).

Later the point is stressed again: "the fictionalist has done remarkably well. He has offered a powerful reduction of a wide variety of modal primitives to one—a streamlining of ideology—with no cost in his ontology ... Is not one modal primitive a fair price to pay for that?"(p. 347).
worlds exist. Because all worlds are q worlds according to the realist, if the antecedent is true, the thoroughgoing fictionalist should say that the implication is true. Thus, the proposition that worlds exist is a consequence of the fictionalist’s analysis of strict implication.

We could go on, but the point should be clear. If the fictionalist were to leave modal propositions about worlds unanalysed, he will be left with a remainder—a series of primitives, like those who adopt a primitive modal language. As it is not clear that the fictionalist’s language is complete without the requisite ontological commitment, it seems that if he wants the benefits, he had better pay the cost.

§ 2.3 ARMSTRONG’S FICTIONALISM

In his recent book *A Combinatorial Theory of Possibility* (1989) David Armstrong defends a view that traces the notion of possibility to the notion of ‘combinations’ in the actual world. Armstrong suggests that states of affairs are complexes of simple constituents—universals and particulars—and that for any way of recombining these individuals and actual universals, it is possible that they might have been thus recombined. There are no alien universals. There are no necessary combinations. There are no impossible recombinations.

Armstrong’s book is exciting and provocative to say the least. But I do not want to focus on the main thesis here. Instead I want to consider Armstrong’s particular variety of fictionalism. Armstrong is an abstract or ersatz fictionalist. Furthermore, he is a many worlds fictionalist. What does this mean? Well, for Armstrong any conjunction of simple individuals, properties and relations which

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8See also Armstrong (1986).
respect the form of atomic states of affairs is a possible world. Because
the combinations themselves do not exist, though, neither do the
possibilia. Instead, possible worlds must be thought of as different
fictions about the way the actual world is. To put it another way, there
is a multiplicity of fictions and each fiction (is not identical to but) is a
story about one particular possible world.

It might be worth comparing the views of Armstrong and Rosen
at this point. Ignoring, for the moment, the problems associated with
Rosen's thesis, what motivation might one have for preferring one
theory over the other? It can't be on ontological grounds if neither
theory postulates the existence of worlds. Instead, we might focus on
any differences regarding the modal truths. Armstrong and Rosen
disagree about what modal truths there are. Both require some
revision of modal opinion—biting the bullet with regard to some
counter-intuitive results. The differences parallel differences between
the counterpart realist hypotheses. Armstrong, for example, believes
that there could not have been any uninstantiated or alien universals.
Rosen, on the other hand, is forced to conclude that there could not
have been a non-actual world with isolated regions of space-time.

Moreover, Armstrong and Rosen adopt different modal logics.
Rosen's logic is S5. Armstrong's logic is S4. All else being equal, then,
the variety of fictionalism one favours should reflect, as far as possible,
one's modal intuitions.

Of course, this assumes that there are no significant difficulties
inherent to one thesis and not the other. And that there are no
contrasting difficulties, such that one fares better overall than the
other. How then does Armstrong fare with regard to the problems that
plagued Rosen? In my estimation, not so well!
The most obvious problem that faces a fictionalist of Armstrong's genre is that the fictions needed simply do not exist. For Armstrong the problem is particularly acute. For any true statement there must be a truth maker. If statements about possibilities are true, as Armstrong says they are, there had better exist something in virtue of which they are true. What then are the truth makers for modal statements? For Armstrong, they are the universals—the existence of a set of universals entails the possibility that the universals might have been recombined. If Armstrong analyses modality in terms of worlds, though, one wonders what work the worlds are doing. Consider the following: "It is possible that \( p \) is . . . said to be true if and only if a world can be found in which \( p \) is true. . . however, the truth maker for 'it is possible that \( p \)' is to be found in our world" (p. 51).

What can we make of this suggestion? If Armstrong gives the truth conditions for modal statements in the usual way—in terms of worlds—and a plurality of worlds does not exist, then this would surely mean that Armstrong is a fatalist. The actual is the possible; the possible is the necessary. This is not a consequence worth embracing. If, on the other hand, Armstrong wants to analyse modality in terms of truth at some non-existent possible world, which it seems to me he does, the proposal is peculiarly enigmatic. Not only could one not know whether a modal statement were true or not, it is difficult to see how something could be true at a world that does not exist. Armstrong would be better off explicitly quantifying over the individuals and universals that are the truth-makers for modal claims. But this would just amount to realism (albeit ersatz realism) about possible worlds.

Perhaps Armstrong has an answer to this objection, though. David Lewis (1992) has interpreted Armstrong as saying the following:
We can grant the point, and go for a *compound fictionalism*. If a novel concerns the life story of a story-teller, there may be stories that exist according to that novel but do not really exist: fictitious fictions. And there may be things that, according to the novel, exist according to these stories; but do not exist according to the novel itself; and do not exist. So we could have one big (fantastic!) fiction according to which all the little fictions of one world each do exist. So then a possible world would be doubly fictitious, something that exists according to a fiction that exists according to another fiction. (Lewis 1992, p.221)

This is the solution, according to Lewis, that Armstrong in fact adopts. The outer fiction, I take it, is Armstrong's book—*A Combinatorial Theory of Possibility*. No problem with non-existent fictions any more! The solution, though, inherits other related difficulties. Once the proposal is made explicit, the objections mounted against Rosen in the last section can be seen to be just as pervasive here. Let me rehearse the worries one more time, to leave no doubt that the problems infect Armstrong's analysis as much as Rosen's.

**THE SEMANTIC PROBLEM**

To see that Armstrong's view violates the substitutivity principle, we also need to examine the proposal in embedded modal contexts. For Armstrong, a way of analysing the iterated modalities might not seem as elusive as it was for Rosen. Because the Concrete Realist's thesis was silent with regard to certain truths about worlds, we were in a position to show that Rosen could not satisfactorily analyse propositions involving iterated modalities.

If we can accept the principle that every truth must have a truth-maker, Armstrong dodges the problem of incompleteness. Armstrong tells us that the truth-makers for modal statements are to be found in
the actual world. Thus, it seems likely that for any true modal proposition, the proposition could in principle be known; all we have to do is apply Armstrong's combinatorial method.

Armstrong still has a problem, however. To illustrate, consider first the modal proposition 'Op'. For Armstrong, this is equivalent to the following claim:

(1) According to the outer fiction it is true in some inner fiction that p.

Consider next the modal proposition 'OOp'. Perhaps the most natural analysis a compound fictionalist could offer is the following:

(2) According to the outer fiction, it is true according to some inner fiction that according to some inner fiction, p is the case.

It is important to note that Armstrong is not committed to the view that some possible worlds are triply fictitious. Armstrong's modal logic is S4, and so given that there are other ways the world could have been, some inner fictions will be accessible to others. What does it mean for one inner fiction to be accessible to another? Presumably this: there are some truths in the inner fictions about other inner fictions. They correspond to what is true according to those fictions. Because the accessibility relation is reflexive, we should have no trouble with translation (2). If it is true according to the outer fiction, that in some inner fiction p, then it is also true, according to that fiction, that according to some inner fiction p is the case.
Note, though, that the modal claim $\mathcal{O}\mathcal{O}p$ involves iterated modalities. If Armstrong's analysis were to meet the requirement that the principle of substitutivity hold in modal contexts, he would be committed to the equivalence of (2) and (3) below:

(3) According to the outer fiction, it is true according to some inner fiction that (according to the outer fiction, it is true according to some inner fiction that $p$).

But is (2) equivalent to (3)? It might be suggested that they are. What is true in $f$ according to the outer fiction and what is true according to the outer fiction will of course differ. But for any inner fiction, $f$, what is true in $f$ according to the outer fiction, corresponds exactly to what is true in $f$. This doesn't seem right, though.

Let $p$ be the proposition that the outer fiction does not exist. It certainly seems possible for this proposition to be true. No fiction is a necessary existent, let alone Armstrong's. If $p$ is possible, then it is possible that it is possible. Locution (2) handles this modal claim well. It is true because there is a fiction according to which the outer fiction does not exist. If we accept (3), on the other hand, this possibility is ruled out. There can be no inner fiction in which it is true that, according to the outer fiction, there is some inner fiction according to which the outer fiction does not exist! Let's see why.

If it is possible for the outer fiction not to have existed, then there is an inner fiction $f^*$ (according to the outer fiction) in which it doesn't. If we assume that the accessibility relation is reflexive, as we must, then the modal claim $\mathcal{O}\mathcal{O}p$ will be true at $f^*$. If we accept (3) as a suitable paraphrase of this modal claim, then we must also accept the
following: according to $f^*$, one of the propositions that is true according to the outer fiction, is that the outer fiction does not exist in $f^*$. But how can that be true? If one of the truths in $f^*$ is about the content of the outer fiction, then the outer fiction must exist in $f^*$. Because what is true in $f^*$ and what is true in the outer fiction according to $f^*$ are the same, the hypothesis is reduced to absurdity. The outer fiction both does and does not exist according to $f^*$. If $f^*$ is a story about a possible world, Armstrong owes us an explanation!

**THE ONTOLOGICAL PROBLEM**

Remember that the main motivation for adopting the view that Lewis calls ‘compound fictionalism’ is simply that the many fictions required do not exist. Thus, the compound fictionalist will say that the proposition that there is a plurality of possible world stories—for simplicity let’s call them worlds*—is literally false.

Because Armstrong’s modal logic is S4 without the Brouwersche Axiom, the accessibility relation between worlds* is both reflexive and transitive. It is not symmetric. It does not follow immediately, then, that it is necessary that worlds* exist. Gideon Rosen, in a forthcoming article in *Analysis*, though, has shown that for Armstrong there are no isolated or fatalistic worlds*—worlds* accessible only to themselves. Hence, it is true according to the outer fiction that at all worlds*, a plurality of worlds* exist.

The compound fictionalist, then, has a problem. Consider the following:

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It is necessary that worlds* exist iff according to the outer fiction, it is true at every world* that worlds* exist.

Because the right hand side of the formula is true, the left hand side of the formula will be true also. Now by using the standard modal axiom \( \square p \supset p \) we can derive the non-modal proposition that worlds* exist. Armstrong, it seems, is committed to the existence of a plurality of worlds*—separate stories about each and every possible world.

Armstrong might, of course, adopt an ad hoc strategy like that suggested for Rosen: the truth conditions for modal statements about worlds* might not depend on the content of Armstrong’s outer fiction. I take it, though, that it is clear that such a strategy would likewise leave us with a remainder of modal primitives. The problem is the same.

Both Rosen and Armstrong provide us with a provocative and intriguing idea for an analysis of modality. What I hope to have shown, however, is that the analyses, as they stand, will not do the work hoped of them. The deflationary motivation is, of course, admirable. We should not want to commit ourselves to a realm of possibilia unless it is essential to an analysis of modality. Perhaps a fictionalist can make her analysis sensitive to facts in the actual world. Perhaps, by analysing the semantic behaviour of the fictionalist’s operator, the fictionalist’s analysis can obey the principle of substitutivity. Still, much work needs to be done.
CHAPTER THREE

FICTIONALISM RESURRECTED

In this chapter I will consider two strategies a fictionalist might consider in order to resolve the ontological problem outlined in chapter 2. Specifically, I examine a proposal put forward by Peter Menzies and Philip Pettit as well as an alternative proposal of my own. While both solutions may be successful, I conclude that the latter proposal is to be preferred. In the final section I consider how the modified thesis can overcome the semantic problem.

§ 3.1 THE MENZIES AND PETTIT PROPOSAL

Peter Menzies and Philip Pettit (1994) believe they can avoid the ontological problem and remain true to the spirit of the fictionalist thesis. They suggest that the problem is a result of the fictionalist's prefixing strategy. Consequently, they revise the prefixing proposal in a way that they believe will "render it proof against the objection". After doing this, they motivate their suggestion with an analysis of the standard possible world semantics that allegedly requires more than the simple fictionalist strategy adopted thus far if it is to capture the essence of the realist's analysis.

Menzies and Pettit believe a solution to the ontological argument can be provided if an alternative prefixing proposal is

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1 This chapter has undergone a number of metamorphoses. Of the original, I have retained all of § 3.4 and my solution to the ontological problem proffered in § 3.2. After writing the first drafts of this chapter, Peter Menzies and Philip Pettit wrote—and subsequently published—their own solution to the ontological problem. I was most happy for the opportunity to contrast my solution with theirs. I was also very grateful for the many long conversations I had enjoyed with Peter and Philip. Many thanks to them both.
adopted. This is not to suggest that the prefix itself is to be revised, but rather the way it is to operate on an open sentence. They note first that the problem arises only when there is embedded quantification over worlds. The prefix envisaged must therefore operate on all quantifiers in such a way as to leave no scope for the corresponding modal claim to make reference to worlds outside a fictionalist context. How could this be done? Menzies and Pettit proffer two alternative strategies. Both require some recasting of the following crucial claim about the content of PW:

(i) according to PW, it is true at every world that there is a plurality of worlds.

Once (i) has been reformulated, it can no longer be inferred that it is necessary that worlds exist.

STRATEGY 1—THE PREFIXING-CUM-ANAPHORA PROPOSAL
The first suggestion is to recast the fictionalist analysis so that any embedded quantification over worlds that falls within the scope of another quantifier over worlds, requires anaphoric back reference to the original quantifier. Because the initial quantifier is governed by the fictionalist operator, so is the embedded quantifier. Thus, (i) must be reinterpreted as something like:

(ii) according to PW, it is true at every world that there is a plurality of those worlds.
As a consequence, the corresponding modal claim will be the harmless proposition that it is necessary that there are several of those worlds. Now it might strike you that this sentence is ill-formed. This result would not suit the purposes of Menzies and Pettit, however, because all other iterated modal statements would be ruled out along with this one. So let’s adopt a principle of charity, giving it a suitable interpretation, and see how the proposal escapes the objection.

The proposal allows a general analysis of modal language in terms of possible worlds. It doesn’t require a commitment to worlds, though, because the crucial modal claim—it is necessary that there are several of those worlds—requires a commitment only to a multiplicity of fictional worlds. That, it is suggested, should not be a cause for concern.

STRATEGY 2—THE PREFIXING-CUM-INDEXING PROPOSAL

The second suggestion is to make explicit the fictionalist’s commitment, not only by way of a sentential operator, but also with the aid of indexed quantifiers. Menzies and Pettit’s proposal is to index all quantifiers that are within the scope of the fictionalist operator by way of a fictionalist subscript. Thus a proposition like (i) must be read as something like:

(iii) According to PW, it is true at every \( p_w \) world that there is a plurality of \( p_w \) worlds.

A \( p_w \) world, in this context, is a world posited in the PW hypothesis. Thus, the proposal emphasizes the fictional nature of the worlds. As a
consequence, the fictionalist has at her disposal another escape from the ontological problem.

Menzies and Pettit believe that the fictionalist can interpret (iii) in one of two ways, both of which will avoid any ontological difficulty. The first way is to suggest that the corresponding modal claim—it is necessary that there is a plurality of $p_w$ worlds—is true enough, but that this only commits us to an ontology of fictional worlds, worlds posited by the $PW$ hypothesis. Such claims, it seems, are consistent with the fictionalist thesis.

Alternatively, it is suggested that one might be less tolerant of such modal claims. The purpose of the indexing proposal is to indicate a link between the fictionalist operator and any worldly quantifiers that appear within its scope. Because this modal claim—it is necessary that there is a plurality of $p_w$ worlds—has an index but no operator to which it is linked, the sentence is ill formed, the claim is meaningless. Thus, it is alleged, the derivation of the troublesome claims are blocked by the rules of translation.

It is my contention, however, that Menzies and Pettit have not yet said enough to avoid trouble. By modifying the fictionalist's thesis they hope to rescue the fictionalist from the ontological problem; they hope to avoid ontological commitment to worlds while retaining the benefits of world talk. They produce translations of ordinary modal claims that do not straightforwardly commit one to an ontology of worlds. But it is yet to be demonstrated that they have avoided commitment altogether.

Menzies and Pettit don't want to deny that any worlds exist. The actual world is a world after all. What they do want to deny, however,
is that there is a plurality of worlds. Thus, they must countenance the following proposition:

(iv) There is not a plurality of real (and concrete) worlds.

Indeed, what is distinctive about the fictionalist's thesis, as opposed to the realist's, is reflected in the fictionalist's attitude to (iv). While the realist believes that it is false, the fictionalist will believe that it is true\(^2\). Given the importance of this claim, the fictionalist must be able to adequately analyse this proposition (not a proposition about worlds posited by the \(PW\) hypothesis).

If the fictionalist assents to (iv), she should also admit that the proposition has some modal status. Any standard modal logic includes the axiom: \(p \rightarrow \Diamond p\). Thus, the fictionalist should admit that it is possible that there is not a plurality of worlds. Yet, if Menzies and Pettit are right, it is here that we find a counter-example to this general inference.

Menzies and Pettit, it seems, analyse all modal claims in terms of \(PW\). But according to \(PW\) every world is such that there is a plurality of worlds. It is admitted that they are only worlds posited by the \(PW\) hypothesis, but there are none of those \(PW\) worlds at which it is true that there is not a plurality of real and concrete worlds—the hypothesis of a plurality of worlds stipulates that they are real and concrete.

\(^{2}\) I am, of course, speaking for the strong fictionalist here. But I suspect that Menzies and Pettit are fictionalists of this stronger variety. Consider the following: 'The motivating thought behind the (fictionalist's) proposal ... (is) the thought that the modal realist is mistaken in thinking that there are any worlds other than the actual one.' [Menzies and Pettit (1994) p. 29]. It should be noted, however, that the objection doesn't trade on this fact. Even the weak fictionalist should allow that it is possible that worlds don't exist.
Moreover, the position is reduced to absurdity when it is realized that none of the worlds posited by $PW$ are worlds at which (iv) is true. As a consequence the fictionalist must say that (iv) is not possible. It is not possible that there is not a plurality of real and concrete worlds. Given that $\Diamond$ and $\Box$ are interdefinable—that there is an equivalence between $\sim\Diamond\sim$ and $\Box$—Menzies and Pettit are forced to concede that is necessary that a plurality of real and concrete worlds exist, and this commitment must be taken literally. The problem is reinstated!

Thus we need to say more if we are to save the fictionalist from her woes. Menzies and Pettit do say more, but let’s defer consideration of what they say until § 3.3. In the next section, I will attempt to provide a solution of my own.3

§ 3.2 MODIFIED FICTIONALISM

One task that faces any fictionalist is to provide some sort of analysis of the semantic behaviour of the fictionalist operator. Rosen, in an attempt to loosely explain the expression, offers the following three glosses:

(i) If $PW$ were true, then $P$ would be true.

(ii) If we suppose $PW$, $P$ follows.

(iii) It would be impossible for $PW$ to be true without $P$ being true as well.

3There are many similarities between what I say in the next section and the discussion in Menzies and Pettit (1994), § 5. The ideas were, however, arrived at independently. See footnote 7 of that paper.
As Rosen admits, none are perfect paraphrases. But some are better than others. Recall that the fictionalist's operator is just a particular instance of a more general operator, an operator that is prefixed (often silently) to any assertion about a fiction. When is a proposition true according to a fiction? One might suggest that a proposition $p$ is true in a fiction $F$ if and only if $p$ is explicitly stated in $F$ or is deductively implied by what is explicitly stated. This, it seems to me, is all that both (ii) and (iii) amount to.

This proposal can't be right, though. It doesn't give a necessary condition for fictional truth. Most of us are prepared to place a fiction against a factual background. As a consequence, there are many truths in fiction that are neither explicitly stated, nor deducible from what is explicitly stated. To illustrate, consider the Sherlock Holmes stories. As Lewis points out:

... it is true, though not explicit, in the stories that Holmes does not have a third nostril; that he never had a case in which the murderer turned out to be a purple gnome; that he solved his cases without the aid of divine revelation; that he never visited the moons of Saturn; and that he wears underpants. (Lewis 1978, p. 268).

Such considerations illustrate a close connection between fictional truth and counterfactuals. David Lewis, in his paper 'Truth in Fiction' (1978), draws this conclusion, suggesting that a proposition $p$ is true in a fiction $F$ if and only if $p$ would have been true had $F$ been told as known fact. Ignoring the proviso that the tale must be told and known, a proviso which seems to me clearly mistaken\(^4\), the analysis

\(^4\)To see why I believe that the story need not be told as known fact, see fn. 6.
provides one of the most promising ways of taking seriously the notion of truth in fiction.\footnote{This is not the only analysis proffered by Lewis. He offers the following alternative for fictions that seem not to depend on contingent facts that are not well known in the author's community: $p$ is true in a fiction $F$ iff the counterfactual `$p$ would have been true, had $F$ been told as known fact' is true at every belief world of the author's community.}

Given that Lewis is right here, the Modal Fictionalist faces a problem. Counterfactual conditionals are modal expressions. The fictionalist, then, seems to tacitly employ a modal primitive in her modal analysis. This would be a serious problem if the fictionalist aimed to provide a reductive analysis of modality. As Rosen points out, though, the fictionalist's proposal is a little more modest: the analysis does not aim to provide a reductive account of modality, but it does, or at least should, reduce the modal primitives to one.

So why not be a little more explicit about our modal primitive? If truth in fiction is so strongly connected with the notion of a counterfactual conditional, then perhaps an analysis that employs them will be more fruitful. Consider again the proposition that there is a ghost that haunted Heathcliff on the windy moors. We have agreed that there is a sense in which the proposition is true. But it is true only if it is understood to be about a story. We might make explicit this commitment by prefixing the assertion with the sentential operator, 'according to the novel \textit{Wuthering Heights}' or alternatively we might say the following: 'if the novel \textit{Wuthering Heights} were true, there would be a ghost that haunted Heathcliff on the windy moors'. Perhaps, then, we can put the fictionalist's analysis of modality in a similar way. We can adopt Rosen's paraphrase (i) above. Thus, a fictionalist can say that it is possible that there are blue swans...
iff, if $PW$ were true, then there would be some world containing blue swans.

The fictionalist, though, must admit to one crucial disanalogy between usual claims about a fiction and claims about the content of $PW$. Fictions are assumed to be about non-existent people, places and events, an observation first made by Ryle, and more recently by Kripke (1980). It is Kripke's view that if we grant that there is no Heathcliff, one cannot say of any possible person that he would have been Heathcliff had he existed. It is a necessary truth that a fiction cannot come true by accident and that fictional names and descriptions cannot refer accidentally. Consequently, the analysis just given will not suffice as a general analysis of truth in fiction.

The modal fictionalist, though, need not look elsewhere for an explication of her operator. It is close enough to the more general prefix. She should not want it to be too close. A weak fictionalist about possible worlds will want her hypothesis to be compatible with the realist's hypothesis. If the present analysis of the story prefix is adopted, the fictionalist's modal thesis will be entailed by, but not entail, the realist's thesis. Moreover, the adherent of the stronger thesis need not find cause for concern either. She can take on board the analysis given in the weaker theory and merely add the stipulation that there are no other worlds, thus ensuring that her thesis is not entailed by the realist's.

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6It is in response to this problem that Lewis says that to determine what is true in a fiction, we must go to the closest world in which it is told as known fact. Unfortunately for Lewis, though, there are many fictions in which there is no intelligent life and so no one can either know or tell the tale.

7There would be no point in adopting a set of truth conditions that made false any counterfactual with a true antecedent. Even if it were admitted that such a reading was compatible with ordinary usage, the fictionalist would still have to assume that there were no other worlds to ensure that there were some true modal claims.
The modal fictionalist, though, must say more if she is to avoid any ontological commitment to worlds. In what follows I will assume some sort of many-worlds fictionalism, akin to that adopted by Rosen. An assumption that was implicit in the argument demonstrating this commitment to worlds was that a fictionalist could countenance the following modal inferences: \( \Box p \rightarrow p \), and \( p \rightarrow \Diamond p \). A fictionalist should be able to countenance these most basic principles of alethic modality, yet it remains a mystery how she could.

It is difficult to see how a fiction could imply anything about actuality. It was suggested that a fiction, like \( PW \), is a fiction of many worlds, among which the actual world is but one. Thus, what is true at all worlds will be true at the actual world; what is true at the actual world will be possible at the actual world. But this can't be right. If the fictionalist is a one worlder, there are some truths at the actual world that are true at no world in the fiction—most notably that there are no other worlds. The actual world, then, is not included in the domain of worlds considered in \( PW \).

The fictionalist, then, should find a way of including the actual world in her domain of quantification. One way might be to use a truth functional operator in the analysis. The idea is motivated by the observation that universal quantification is analogous to conjunction \( (\forall x \, Fx \iff Fa \land Fb \land Fc \land ...) \) and that existential quantification is analogous to disjunction \( (\exists x \, Fx \iff Fa \lor Fb \lor Fc \lor ...) \). Because necessity and possibility are analysed by the realist as quantification over a domain of worlds, the fictionalist can justify adopting an analogous strategy. She will merely add a world to the domain in this way. It is important to note that the fictionalist is not introducing any new
operators to the language. She has only made use of the truthfunctional connectives already existing in the language.

Before giving a more general analysis, I will proceed by way of example. If we say that '□p' is true iff if PW were true, then all worlds would be p worlds, it follows as a consequence that worlds exist. However, we can give the truth conditions in another way. Why not say that '□p' is true iff [(if PW were true then all worlds would be p worlds) and p]? For the biconditional to come out true, both conjuncts on the right hand side of the formula must be true. On most occasions both conjuncts will be true if the first is. When considering the special case where p is the proposition that worlds exist, however, it will turn out that the first conjunct is true but the second is false and so '□p' comes out false.

To see that the analysis can be applied elsewhere without falling victim to the same difficulty consider the strict entailment 'p ⊨ q'. This will be true iff [(if PW were true, then it would be the case that all p worlds are q worlds) and p → q]. More generally, then, we might say that for any arbitrary modal statement, M, we can give the truth conditions for the statement in the following way: M iff [(PW □→ W) # W@] where W is the realist's non-modal paraphrase of M and W@ is the proposition that makes the fictionalist's analysis sensitive to truth in the actual world. The truth conditions for the connective '#' are determined by the content of W. If, for example, an existential quantifier is used, # is interpreted as the connective 'v'. If, on the other hand, a universal quantifier is used, # is interpreted as the connective ' &'.
Of course, the proposition that worlds might have existed turns out to be true on the above analysis. Moreover, the fictionalist really needs to embrace this consequence. If one adopts certain counterfactual axioms, like those of Lewis (1973), counterfactuals with impossible antecedents are always vacuously true. Alternatively, one might want to say that such counterfactuals are vacuously false. But either way, if the possibility of worlds existing were ruled out, the fictionalist thesis would lose all plausibility. Because the analysis depends on a counterfactual that antecedently assumes that worlds exist, either every modal proposition would be vacuously true, or every modal proposition would be vacuously false, thus contradicting the most uncontraversial of modal intuitions.

So the fictionalist must countenance the possible existence of other worlds. This won't present any problem for the fictionalist. Possibly $p$ does not entail $p$, and so we are in no danger of any commitment to worlds. This result might seem counter-intuitive for those used to the realist's analysis of modality, but that is no objection, any more than the incredulous stare is an objection to realism. It might, of course, be true that those who respond to Lewis's thesis in this way do so because they find the very idea of an infinity of non-actual but existent possibilia incoherent in some way. If this were the case, the fictionalist program I have adopted would seem just as implausible. However, this seems unlikely. Lewis's account is coherent. We can understand perfectly what Lewis means and admit that the thesis is at least epistemically possible. It's just that we find Lewis's reasons for believing the hypothesis unreasonable.

For those still worried, though, the suggestion that there might be other worlds can be motivated on independent grounds.
Remember that we are operating on the framework provided by Lewis (most importantly Lewis, 1986). Lewis defines a world as an isolated region of space-time. More specifically, Lewis says that a world is the mereological sum of its worldmates, and that individuals are worldmates iff they are spatiotemporally related (see Lewis 1986, pp. 69-71). Remember also that actuality is merely an indexical notion. To say that some thing is actually the case, is to say that is the case at this world, this region of space time.

Bigelow and Pargetter (1987 and 1990) challenge the latter assumption, pointing out that it is at least epistemically possible that the actual world is a world with spatio-temporally isolated parts. They support their contention by considering certain assumptions made by science:

Einstein’s general theory of relativity allows space-times of many different topologies, including ones with disconnected regions. We do accept, as would Lewis, worlds with nearly isolated regions, regions which could be reached only along a restricted number of world lines, and then perhaps only sometimes and even perhaps only with a certain objective chance. It seems stipulative to allow all these, but then rule out the case in which the final link is broken or the chances fall the wrong way (Bigelow and Pargetter 1990, p. 191).

Such considerations do indeed put pressure on the suggestion that these isolated universes might exist and yet somehow be non-actual. As Lewis (1992) points out, this problem for the concrete realist is inherited by the concrete fictionalist. Like Lewis, then, the fictionalist is entitled to think that this is a spoils to the victor issue. The argument, though, is of further interest to the fictionalist worried about the possible existence of other worlds. Because the argument provides support for the contention that there might be other isolated
regions of space-time, *ex hypothesi*, we have reason to believe that there might be other worlds.

Thus, the suggestion that it is possible, though not necessary, that worlds exist seems, at the very least, an intuitively plausible idea. It is worth considering, though, some consequences of this suggestion that might be of some concern to the fictionalist.

The fictionalist is an actualist. This means that the only things that exist are actual. The position is, of course, compatible with Lewis's indexical theory of actuality. But it does give some special distinction to the actual world—it alone exists. This leaves the fictionalist open to the following kind of objection. Consider the following modal statements:

(i) it is necessary that if I raise my arm, then worlds exist;
(ii) if I were to raise my arm, then worlds would exist.

Both the counterfactual and the strict implication are true. The reason is that any way the world could be (that is not the way it actually is) is a world among many according to the modified fictionalist analysis. Any merely possible world, any counterfactual situation, is one in which there is a multiplicity of worlds—worlds that are real and concrete—accessible to one another. This holds true even if the world were only ever so slightly different. For many, this will be a worrying consequence: to a committed actualist for whom actualism is a necessary truth, to those adherents of a counterfactual analysis of
freedom (let's not say it's within our power to bring it about that an uncountable number of universes exist), etc.⁸

The criticism is a reasonable one, but it is not necessarily decisive. The fictionalist needn't be such a committed actualist. There are good reasons not to adopt a conditional analysis of freedom. The fictionalist can admit that any counterfactual situation is one in which there is a multiplicity of worlds—worlds that are real and concrete—accessible to one another. The fictionalist faces a problem, but not a devastating problem. At least that's how it seems to me.

Notice that any modal theory is revisionary with regard to some modal opinion. Lewis (1986) considers ways in which the ersatz theory is revisionary. Consider also an ersatz theory which Lewis (1986) doesn't consider: combinatorial realism. (This is just Armstrong minus the fictionalism.) According to this theory there could not have been any uninstantiated or alien universals. Lewis's theory, it will be recalled, is also problematic. Not only does Lewis require an extravagant ontology; he is forced to conclude that there could not have been a world with isolated regions of space-time (a problem that need not infect the concrete fictionalist's thesis). The objection shows that the fictionalist, like everyone else, has put forward a revisionary modal theory. But the theory need not be abandoned for that reason. On the whole it is faithful to common sense modal opinion.

Remember also that Rosen's (1990) original intention was to provide a panacea for philosophers unable to bring themselves to commit to an ontology of worlds despite seeing how useful the idea was. It seems to me that while such philosophers may have qualms about this modified fictionalism, there is no doubt that they will prefer

⁸Thanks to David Lewis and Daniel Nolan for pressing this objection on me.
it to the alternative—realism. Both are committed to worlds in counterfactual situations. Fictionalism is a little more palatable in that it requires no commitment to the idea that the worlds that would exist do in fact exist. This is a big difference, a difference that should count in the fictionalist's favor.

Indeed, given Lewis's own view of the matter, this revised fictionalism should seem reasonably palatable. If we're just concerned with the play-off between ontology and ideology (allowing that we can be somewhat free to revise general modal opinion), this revised fictionalism has no extravagant ontology and is as ideologically sound as Rosen's fictionalism.

Perhaps there another worrying consequence of the modified thesis, though. If other worlds might have existed, how many might there have been? The answer is clear: the totality of worlds could have been infinite. Indeed, there might have been as many worlds as the ways the world might have been.

But could there have been any less? Could there have been only seventeen worlds perhaps? Assuming that there is in fact only one world, the answer is no. There could not have been only seventeen worlds if the hypothesis of a plurality of worlds were true. In that case there would be an infinite number of worlds. Indeed, for the fictionalist, there are only two possibilities regarding the distribution of worlds: there might have been as many worlds as there actually is and there might have been \( \kappa \) worlds, where \( \kappa \) is the cardinality of the all the worlds postulated by \( PW \). This exhausts the possibilities and that seems odd!9

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9Thanks to Gideon Rosen for pressing this objection on me.
The fictionalist should, I maintain, suggest that this is a spoils to the victor issue—pointing out that the realist must also rule out the possibility of there being only seventeen worlds also. Yet such a response might seem to undermine part of the motivation for adopting this modified variety of fictionalism. The Bigelow-Pargetter argument was advanced earlier in defence of the claim that other worlds might exist. But, it might be contended, what the objection here shows is that the modality in question was an epistemic modality and should have no bearing on questions about the metaphysical modalities. To some extent I agree. But it should be stressed that the Bigelow-Pargetter argument was used to support the thesis I called agnosticism about possible worlds. ‘Agnosticism’ is an epistemic notion. It was not used to support the thesis that it is possible—in the metaphysical sense—that there be any number of worlds.

Thus, the fictionalist can avoid the ontological problem if she adopts the modified analysis sketched above. While one might have qualms about the modal status I have ascribed to the proposition that worlds exist, I hope to have alleviated at least some of the concern.

§ 3.3 MENZIES AND PETTIT REVISITED

Having outlined an alternative fictionalist translation schema, it is worth considering again the proposal put forward by Menzies and Pettit. Recall that it was suggested that the ontological problem arises as a result of the fictionalist's prefixing proposal. In response, then, they proffer two alternative amendments to the way in which the prefix is to operate on an open sentence. These modifications, it was
supposed, get the fictionalist out of trouble. It was noted, though, that the solution did not take adequate account of the important and distinctive fictionalist claim, a claim that they wanted to say was true:

(iv) There is not a plurality of real (and concrete) worlds.

The proposition can't be true, however, given that the analysis entails that it is not possibly true. But if (iv) is not possible, then it must be necessary that a plurality of real (and concrete) worlds exist. The solution to the ontological problem, it seems, was a spurious one after all. Thus, we were motivated to find an alternative account.

Menzies and Pettit do recognize this problem, however, and they offer a way to countenance the possibility of (iv). They say the following:

(This modal claim) is, as we might put it, a modal dangler: a sui generis claim that does no general work but that is an essential part of the fictionalist position ... the appropriate truth conditions for dangling modal operators are going to be the following. Possibly P if and only if ‘P’ holds at the actual world or at one of the other worlds posited in PW. Necessarily P if and only if ‘P’ holds at the actual world and at all of the other worlds posited in PW. (Menzies and Pettit (1994) pp. 35-36)

It should be clear that the solution that Menzies and Pettit proffer for ‘modal danglers’ is similar to the solution I proffer more generally in order to avoid the ontological problem. The overall proposal, then, has the advantage of not presupposing an ontology of worlds. Yet one can only wonder what work the new prefixing proposal is doing. A solution to the problem at hand seems to be offered only in the final section. The reason it is not necessary that there is a plurality of real
and concrete worlds is because that is not a plurality of such worlds at the actual world. Problem solved! When comparing the two proposals, then, the modification proffered in §3.2 has the following advantages over the Menzies and Pettit analysis: simplicity and generality.

These are not the only advantages, however. Menzies and Pettit, like Rosen and Armstrong, still face the challenge posed by the semantic problem. The Menzies and Pettit proposal cannot help us in our endeavor to provide a systematic and general semantic analysis of our modal idioms. If the alternative analysis proffered in §3.2 can, as I maintain it does, one should favour the latter approach.

§3.4 THE SEMANTIC PROBLEM

Consider the claim that it is necessarily possible that \( p \). For the modal realist, this is equivalent to the following claim about possible worlds:

\[(R) \text{ At all worlds, it is true at some world that } p \text{ is the case.}\]

The fictionalist, then, should have an analogous translation of this modal claim. If the fictionalist is just paraphrasing the realist's claim, it would be most natural for her to offer the following:

\[(F) \text{ If } PW \text{ were true, it would be the case that at all worlds, it is true at some world that } p \text{ is the case.}\]

\[10\text{In what remains of this thesis, I omit that part of my analysis that adds the actual world to the domain of fictional worlds (...) } W_{\emptyset} \text{ where it is unimportant. The remaining discussion is complicated enough without adding to this complexity.}\]
Given that the modal claim involves iterated modalities, though, if the analysis is recursive, the fictionalist should offer the following instead:

\((F^*)\) If \(PW\) were true, it would be true at all worlds that (If \(PW\) were true, it would be true at some world that \(p\) is the case).

What the fictionalist must show is that \(F\) and \(F^*\) are equivalent. Perhaps this is obvious. Because \(PW\) is already assumed to be the case, the second conditionalization is redundant. Moreover, it might be noted that the analysis works for a more general analysis of fictional truth. Consider the following:

\((W)\) If the novel \(Wuthering\ Heights\) were true, then (if the novel \(Wuthering\ Heights\) were true, there would be a ghost that haunted Heathcliff on the windy moors).

This is a complicated way of conveying the information, but it is true enough. The iterated occurrence of the fictionalist counterfactual does not result in a change of truth value. If the embedded proposition is true, then so is \(W\).

To demonstrate more fully, though, it is worth noting that when a counterfactual conditional appears within the scope of a quantifier quantifying over worlds, it is equivalent to a claim in which the counterfactual conditional is replaced by a material conditional. Consider the following two lemmas with proofs using the Lewis semantics for counterfactuals\(^{11}\):

\(^{11}\)The proofs assume the following equivalence: \(p \supset q \dashv \vdash \neg p \lor q\).
(1) \( \forall w (Fw \rightarrow Gw) \) iff. \( \forall w (~Fw \lor Gw) \)

Proof

\( \Rightarrow \) Let \( \forall w (Fw \rightarrow Gw) \), but suppose for reductio that \( ~\forall w (~Fw \lor Gw) \), then \( \exists w (Fw \& ~Gw) \). But at that world, \( i, ~ (Fi \rightarrow Gi) \), which contradicts our original assumption. Hence, \( ~\exists w (Fw \& ~Gw) \) which entails \( \forall w (~Fw \lor Gw) \).

\( \Leftarrow \) Let \( \forall w (~Fw \lor Gw) \), but suppose for reductio that \( ~\forall w (Fw \rightarrow Gw) \), then \( \exists w (Fw \& ~Gw) \)\(^{12}\). But this is true only if there is some \( F \& ~G \) world that is at least as close to it as any \( F \& G \) world\(^{13}\). But if there is an \( F \& ~G \) world, then at that world, \( i, ~(Fi \lor Gi) \), which contradicts our original assumption. Hence, \( \forall w (Fw \rightarrow Gw) \). Q.E.D.

(2) \( \exists w (Fw \rightarrow Gw) \) iff. \( \exists w (Fw \& Gw) \lor ~\exists w (Fw) \)

Proof

\( \Rightarrow \) Let \( \exists w (Fw \rightarrow Gw) \). If \( F \) is impossible, then \( ~\exists w (Fw) \). Hence, \( \exists w (Fw \& Gw) \lor ~\exists w (Fw) \). If \( F \) is possible, suppose for reductio that \( ~\exists w (Fw \& Gw) \), then \( \forall w (Fw \& ~Gw) \). Thus there is no world at which there exists an \( F \& G \) world that is closer than any \( F \& ~G \) world, so \( ~\exists w (Fw \rightarrow Gw) \), which contradicts our original assumption. Hence, \( \exists w (Fw \& Gw) \lor ~\exists w (Fw) \).

\( \Leftarrow \) Let \( \exists w (Fw \& Gw) \lor ~\exists w (Fw) \). If \( ~\exists w (Fw) \), then by definition (the vacuous case) \( \forall w (Fw \rightarrow Gw) \). Hence, \( \exists w (Fw \rightarrow Gw) \). If \( \exists w (Fw \& Gw) \), then at that world, \( i, Fi \rightarrow Gi \). Hence, \( \exists w (Fw \rightarrow Gw) \). Q.E.D.

\(^{12}\)It is worth pointing out that the proof does not rely on the somewhat controversial assumption that \( ~(p \rightarrow q) \leftrightarrow (p \lor \sim q) \). Note that \( \forall w (~Fw \lor Gw) \) is equivalent to \( \forall w (Fw \rightarrow Gw) \). Note also that to say \( F \rightarrow G \) is to say that the actual world is an \( F \supset G \) world and that there is a closer \( F \& (F \supset G) \) world than any \( F \& ~\sim (F \supset G) \) world. Because all worlds are, \textit{ex hypothesi}, \( F \supset G \) worlds, it follows that all worlds are \( F \rightarrow G \) worlds also.

\(^{13}\)Note that any might counterfactual is vacuously false if there are no \( F \) worlds.
Given that I am right here, we can use the first lemma to show that \( F^* \) is equivalent to the following:

\[
(F^{**}) \text{ If } PW \text{ were true, it would be true at all worlds that (either it is not the case that the hypothesis of a plurality of worlds (PW) is true or it is true at some world that } p \text{ is the case).}
\]

This is a rather awkward and convoluted rendering of \( F^* \), however it suits the present purpose well. Recall that when discussing the ontological problem, it was demonstrated that if \( PW \) were assumed to be the case, the proposition that a plurality of worlds exists would be true at all worlds. It follows straight-forwardly from this, then, that the first disjunct within \( F^{**} \) is true at no world. The second disjunct, then, must be true at every world. That is to say, \( F^{**} \) is equivalent to the proposition that if \( PW \) were true, it would be the case that at all worlds, it is true at some world that \( p \) is the case. But this is just \( F \), the proposition we started with. \( F \) and \( F^* \), then, are equivalent: the fictionalist's analysis can be applied recursively, and yet remain an adequate paraphrase of the realist's analysis.

Thus, it should be clear that the adoption of a primitive counterfactual conditional in our analysis helps the fictionalist in a number of important respects. For some the strategy may be as unsatisfactory as simply adopting an ontology of worlds. But for those of us who are happy to adopt a weaker stance, talking only as if worlds existed, I hope to have shown that the analysis is good enough.
I hope to illustrate just how close (and just how disparate) the two theses really are.

A contrast between fictionalism and realism is not, however, the only aim of this chapter. At some junctures it will be interesting to provide a contrast between the strength and varieties of fictionalism. Where such comparisons are important, I will indicate as much.

§ 4.1 PRIMITIVE COUNTERFACTUALS

Having modified the fictionalist’s analysis of modality in chapter 3, we are left with a modal primitive—a primitive counterfactual conditional. We have already seen that there is a significant advantage in adopting the counterfactual over the fictionalist’s prefix, namely that we can solve the semantic problem. But philosophers and logicians will undoubtedly have some reservations about the fictionalist’s unabashed adoption of this conditional in her explication of modality. As a consequence, the analysis stands in need of much defense. This section aims at addressing at least some of these qualms.

As was noted earlier, a fictionalist’s operator—according to PW or the counterfactual equivalent—is a primitive modal operator. The fictionalist, then, seems to face the same predicament as the ersatzer. Her hypothesis is not circular. The fictionalist, like the ersatzer, can analyse a wide variety of modal notions with the aid of her unanalysed operator. But she cannot reduce the modal to the non-modal. Unlike the concrete realist’s analysis, then, her analysis is not thoroughly

size of this chapter, and partly because I could not add much to the discussion of this issue found in Rosen (1990).
reductive. Thus, it seems the fictionalist has not provided a decisive counter to modal realism. Nevertheless, I do not intend to pursue this point here. Such considerations will be taken up in Chapter 5.

The fact that the fictionalist analysis is not a reductive analysis is not the only worry one might have about my use of the counterfactual conditional. Given a choice between the fictionalist prefix advocated by Rosen and Armstrong and the counterfactual conditional advocated by myself, it might seem that if we must adopt an unanalysed modal primitive in our general analysis of modal notions, there are reasons to prefer the latter to the former. Why? The semantic behaviour of modal operators like '□' and '◊' are reasonably well understood. It is not clear, however, that the same can be said of the fictionalist prefix advanced by Rosen and Armstrong. Any story prefix, it might justifiably be maintained, is too poorly understood to serve the purpose the fictionalist hopes it will. Given that the fictionalist is attempting to explain the former in terms of the latter—the comprehensible in terms of the obscure—her analysis is far from helpful. Rosen (1990) acknowledges this difficulty:

(One objection to) the fictionalist's theory is not just that it is less comprehensive than we might have hoped: it is altogether unhelpful. For the fictionalist's modal primitive is an especially obscure one—far more obscure, in fact, than the modal notions he would explain by means of it. (Rosen (1990) p. 344)

In the past twenty-five years or so—due to the work of Stalnaker and Lewis—we have come to understand much more about the semantic behaviour of counterfactual or subjunctive conditionals. It might be supposed, therefore, that it is a more appropriate primitive to
adopt in one’s analysis. The fictionalist should not, however, be over confident.

There have always been concerns about how we are to understand counterfactuals, concerns that have been emphasized, for example, in the works of Goodman and Quine. Possible world semantics don’t completely resolve these concerns. But it locates just where such concerns arise. Consider the following pair of conditionals considered by Quine:

(i) If Caesar were in command (in Korea), he would use the atom bomb

(ii) If Caesar were in command (in Korea), he would use catapults.

We can imagine contexts in which we would assent to (i) and others in which we would assent to (ii). (Nevertheless, it seems unlikely that we would find ourselves in a context in which we would be prepared to assent to both). Such examples illustrate the fact that counterfactuals are infected with vagueness. How we resolve this vagueness will depend on the context we find ourselves in.

Those who advocate an analysis of counterfactuals in terms of possible worlds will analyse (i) and (ii) in the following kind of way. (Here I am adopting the Lewis (1973) semantics):

(i*) There is a world in which Caesar is in command and he uses the atom bomb that is closer (more similar) to the actual world than any world in which Caesar is in command and it’s not the case
that he uses the atom bomb (if there are any worlds in which Caesar is in command).

\[(ii^*)\] There is a world in which Caesar is in command and he uses catapults that is closer (more similar) to the actual world than any world in which Caesar is in command and it's not the case that he uses catapults (if there are any worlds in which Caesar is in command).

Notice that the explication of the counterfactuals above does not resolve the inherent ambiguity. It is still vague which of \((i)\) or \((ii)\) is true. We can, however, understand the vagueness of this concept in terms of another. The vagueness of a counterfactual, it is maintained, is a result of a vagueness in the idea of a similarity relation between worlds. Which kinds of similarities (and differences) are most important will vary from context to context. This suggestion—made by Lewis and Stalnaker—has, at the very least, aided our understanding of this once ill-understood notion. Consider the following:

It may be said that even if possible worlds are tolerable, still the notion of comparative overall similarity is hopelessly unclear, and so no fit foundation for the clarification of counterfactuals or anything else. I think the objection is wrong. 'Unclear' is unclear: does it mean 'ill-understood' or does it mean 'vague'? Ill-understood notions are bad primitives because an analysis by means of them will be an ill-understood analysis ... But comparative similarity is not ill-understood. It is vague—very vague—in a well understood way. (Lewis (1973) p. 91)
Even if we grant Lewis's point, however, the modified version of fictionalism cannot escape criticism any more than the more natural varieties of fictionalism can. Doesn't it seem undesirable to analyse what appear to be determinate modal notions, such as possibility and necessity, in terms of this admittedly vague notion? The realist can rest easy. Her analysis of counterfactuals is independent of her analysis of other modal notions. The fictionalist, on the other hand, should be concerned that the counterfactual conditional is a crucial part of her analysis of the other modalities.

Finally let me consider one further concern one might have about my choice of primitive. If we were to adopt a story prefix instead of a counterfactual as our preferred primitive, we could analyse propositions like 'If swans smoked cigars, monkeys would smoke pipes' as follows:

According to PW, there is world in which swans smoke cigars and monkeys smoke pipes that is closer to the actual world than any world in which swans smoke cigars and monkeys don't smoke pipes (if there are any worlds in which swans smoke cigars).

The variant of fictionalism that I have advanced, however, might seem to have the unfortunate consequence of forgoing the opportunity to further analyse such conditionals. Yet it is not immediately obvious that this modified fictionalism is worse off than that advocated by Rosen (or Armstrong). There is a trade-off. The adherent of the view I advocate is in a position to analyse the fictional modalities in a way that other fictionalists cannot. Consider the
proposition that according to the Sherlock Holmes stories, Holmes smoked a pipe. It can be analysed (a little unnaturally) as follows:

If $PW$ were true, there would be a world in which the Sherlock Holmes stories were true and Holmes smoked a pipe that is closer to the actual world than any world in which the Sherlock Holmes stories were true and Holmes didn't smoke a pipe (if there are any worlds in which the Sherlock Holmes stories were true).

Nonetheless, it still might seem that the trade-off favours the more natural varieties of fictionalism over the modified fictionalist thesis I favour. Possible worlds semantics have not only aided our understanding of counterfactuals, they have enabled us to describe the formal properties of the counterfactual in a rigorous way. Recent developments in this area have been impressive. Contemporary philosophical studies of fiction, on the other hand, and in particular inquiries into the logical behaviour of fictional operators, have not been advanced by possible world talk to anywhere near the same extent. While philosophers agree that there is some connection between counterfactual truth and truth in fiction, it would not be unfair to say that the orthodox view is that fictional truth is a hyper-intensional notion.²

Thus, the fictionalism I have defended faces the unhappy prospect of forgoing the analytic advantage of a paraphrased possible worlds analysis of counterfactuals in favour of a dubious analysis of truth in fiction. Whether or not one thinks this is a significant embarrassment for the fictionalist, the fictionalist would certainly do well to avoid the difficulty.

²See, for example, Currie (1990) and Walton (1990).
Let me consider one possible panacea. Perhaps the fictionalist's counterfactual is importantly different from the standard counterfactual. The fictionalist's conditional, let it be supposed, is a kind of 'meta-theoretic' counterfactual that does not behave in the same way as ordinary counterfactuals. Thus, the fictionalist could analyse sentences containing the customary counterfactual in terms of this new and unique conditional.

Perhaps the suggestion can be partly motivated. Lewis, at one point in his book *On the Plurality of Worlds*, attempts to explain his principle of plenitude. The principle is put, somewhat roughly, as follows:

Any way a world (or part of a world) could possibly be is a way that some world (or part of a world) is.

But Lewis expresses some dissatisfaction with this way of putting things. The principle is meant to say something about the abundance and completeness of worlds as they are distributed through logical space. But there is a hitch, as Lewis observes:

(The principle) says only that every world is identical to some world. That would be true, even if there were only seventeen worlds, or one, or none. (Lewis (1986) p. 86, my italics).

The important point to notice here is that Lewis is using the subjunctive mood to express something he couldn't if we were to take him at his word, and analyse such sentences in the manner described.

It would not be the first instance of such difference. Backtracking counterfactuals (for example, 'If nuclear waste were sent to be sent into outer space in the future, the Challenger accident wouldn't have happened') are such that any vagueness is resolved in a non-standard way.
in Lewis (1973). According to the orthodox semantics, any counterfactual with an impossible antecedent is (vacuously) true. Given that Lewis believes it is necessary that there is an infinite number of worlds, (if we took him literally) it would not matter what principle was being advocated—perhaps: any way a world could not possibly be is a way that some world is—it would be true, according to Lewis, if there were only seventeen worlds, or one, or none. Of course we are not meant to take him so literally. But to understand him charitably seems to require that he be interpreted as using the kind of conditional advocated above.

§ 4.2 EPISTEMOLOGY

Modal realism is a theory that is thought to provide an analysis of modality. If it is to succeed, there are at least two important requirements that must be met: first, it should provide the truth conditions for modal statements, and second, it should provide some account of how it is that we come to have modal knowledge. As many have pointed out, though, it is not at all obvious that the realist has met this second requirement⁴.

For the realist, possible worlds are spatio-temporally isolated from one another. As a consequence, they are causally impotent with respect to the actual world. But, runs the objection, it is a necessary condition of someone's having knowledge about a certain subject matter that there be a causal connection of some sort that holds between the knower and that which is known. The modal realist

⁴See, for example, Richards (1975), Skyrms (1976) and Armstrong (1989). See also Rosen's (1990) discussion in § 6 of that paper.
violates this condition. At the very least, it seems remarkable that we know any of the modal truths—or at least any modal truths that are not also actual truths.

Rosen (1990)—like myself—is not keen to pursue this point, finding Lewis's response to the problem plausible, if not compelling. What is interesting, as Rosen observes, are some of the remarks Lewis (1986) makes while tackling this objection. Responding to the 'how do we know' question (as though it were a request for some sort of 'naturalistic epistemology') Lewis says the following:

In the mathematical case, the answer is that we come by our opinions largely by reasoning from general principles that we already accept ... I suppose the answer in the modal case is similar. I think our everyday modal opinions are, in large measure, consequences of a principle of recombination ... One could imagine reasoning rigorously from a precise formulation of it, but in fact our reasoning is more likely to take the form of imaginative experiments. We try to think how duplicates of things already accepted as possible—for instance, because they are actual—might be arranged to fit the description of an alleged possibility. Having imagined various arrangements—not in complete detail of course—we consider how things might aptly be described. (Lewis (1986) pp. 113 - 114)

Thus, Lewis quite plausibly puts forward an account of the role imagination plays when we reason about the modal facts. But Rosen poses a problem for the realist swayed by Lewis's rhetoric.

We find the realist asserting two propositions. First, the modal truths are identical to truths about a set of worlds. Second, the principles which guide our imagination are true of those worlds.

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5It is open to the realist to reject the assumption that it is a necessary condition of someone's having knowledge that there be a causal connection of some sort that holds between the knower and that which is known. Lewis in fact does this, drawing an analogy between our method of attaining knowledge of possible worlds and our knowledge of mathematical entities.
Rosen's point is that it is at best a contingent truth that both of these proposition are true together. Given this, it seems a surprising coincidence that our imaginative capacities coincide so perfectly with the modal facts, particularly when we have had no acquaintance with (most of) the worlds. Is not such a conjecture too much to demand of our credulity? Consider the following:

This line of response ought to seem profoundly puzzling ... a striking conjecture. We may ask: is it just a coincidence that the principles which guide our imaginations truly describe a domain of objects with which human beings had absolutely no contact when those principles were being shaped ... there might have been creatures whose imaginative principles were quite out of step with the distribution of worlds in modal space. ... The only point I want to stress is that no analogous problem arises for the fictionalist. If the realist is right ... then when we engage in imaginative experiments, the least we discover is what is true according to $PW$. But for the fictionalist, that is enough. Modal facts are just facts of that kind. (Rosen (1990) p.340)

Rosen is certainly right here. If we adopt fictionalism over realism, there is no longer any mystery as to why we can trust our imagination as a guide to discovering what the modal truths are. This is certainly an advantage the fictionalist has over the realist.

But this is not the only epistemic worry the modal theorist might have. There are some that still need to be addressed before we can conclude that fictionalism, unlike realism, makes plausible epistemological claims. There is, as Rosen points out, a very real worry regarding how it is that we learn through imaginative reasoning the consequences of these imaginative principles. The fictionalist, like the realist, owes us some explanation here.
But there are also epistemic worries unique to fictionalism. Let me outline two. It seems likely that they can both be resolved, but the fictionalist at least owes us some demonstration that this can be done.

First, when we ask the fictionalist the question ‘How can we come to know what the modal truths are?’, it might seem that she has at hand a particularly straightforward answer: just read the book (*PW*). But if that were the only answer the fictionalist could proffer, we could not be blamed for feeling more than a little unsatisfied. *On the Plurality of Worlds* was not published until 1986. Yet we all had strong modal opinions, could justifiably claim to know what the modal truths are, well before 1986. Indeed, it would not be unreasonable to suppose that people had justified modal beliefs well before humans could communicate such sophisticated ideas to one another.

One requirement of any philosophical analysis (of the form $P \iff P^*$) is that the bi-conditional be knowable *a priori*. It seems that the problem at hand arises because the fictionalist merely provides us with an *a posteriori* method for attaining modal knowledge. Perhaps the fictionalist will not pretend to be offering a modal analysis. Rosen (1990), at certain points, seems to be toying with something more modest than that (though his motivation is different from that presented here):

Throughout I have supposed that fictionalism, like modal realism, aims to be a theory of possibility ... But note that this assumption is not strictly necessary given the modest problem we began with. All Ed (we) ever wanted was license to move back and forth between modal claims and claims about worlds. Such transitions are guided by (the fictionalist) bi-conditionals ... But it is one thing to embrace these conditionals—even to embrace them as a body of necessary truths—and another to regard them as providing analyses. (Rosen (1990) pp. 353 - 354)
But if the fictionalist does aim to provide an analysis of modal terms, she seems committed to asserting that \( PW \) is something like an abstract set of principles or postulates that exist independently of any written work. Such postulates are accessible to anyone at any time. This does not seem an unreasonable suggestion. As a consequence, the fictionalist can give a plausible account of our method for attaining modal knowledge \( a \ priori \). The consequences of this suggestion will be investigated in Chapter 5.

Second, consider the fictionalist's fiction. Rosen chose part of Lewis's fiction—something like the ontological thesis—and supplemented it with an encyclopedia, 'a list of the non-modal truths about the intrinsic nature of this universe (world)'. But was there anything that compelled us to choose that fiction? It seems that there are many stories about possible worlds which might serve as the basis for an alternative fictionalist analysis of the alethic modalities. Perhaps it will be thought that only \( PW \) will do, for any ersatz theory inherits an additional modal primitive. But there is something unsatisfying about this suggestion. It seems foolhardy to rule out of hand the possibility that there will be a theory developed (at some time in the future) which has the same reductive capacity as that put forward by Lewis. Moreover, it might be suspected that such a theory, taken as a fiction, exists already. Perhaps, once one adopts the right kind of ersatz fictionalism, the ersatzer's original modal primitive drops out. Any need for an appeal to primitive modality might be satisfied by the fictionalist's prefix. (I do not intend to investigate such a proposal here.)
The chief constraint when choosing one’s fiction should be, as Rosen acknowledges, that it be one in which the usual claims about possible worlds are true. She will thus be able to countenance our common modal intuitions. But the fiction one chooses will inevitably commit the fictionalist to more than just that. There are some modal matters about which the common man will have no opinion. The modal theorist, however, is placed in the position of adjudicator. Indeed, she is often forced to stipulate that such propositions are possible or impossible based on certain esoteric theoretical considerations. For example, Lewis tells us it is not possible that there are discontinuous regions of space-time and that it is necessary that there is an (unknown) upper bound to the dimensionality of the largest space-times. Armstrong tells us there could be no alien universals.

The problem for the fictionalist, it seems to me, is that she must choose between these fictions. How is she to do that if there is no strong common modal intuitions about these controversial propositions? But it seems to me that if there are no good reasons to prefer one theory over all others, the fictionalist faces a dilemma: she must advocate either a kind of relativity thesis about modality or a sceptical thesis of some form or other. Let’s hope that such discriminating reasons are in the offing.6

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6Perhaps the fictionalist could first locate all the plausible fictions that would serve her purpose and then modify her thesis in the following way: P iff according to all such possible world stories, P*. But such a thesis would give rise to incompleteness problems akin to those outlined in §4.4. Furthermore, it might seem unreasonable to rule out the possibility of such propositions merely on the basis that the man on the street has no opinion on the matter.
§4.3 ACTUALITY AND ACTUALISM

Actualism is the thesis that everything is actual; that there are no non-actual, merely possible worlds or individuals. Moreover, an actualist will assert that this thesis is analytically true. One objection to Lewis’s hypothesis, then, is that it denies this obvious truth. Recall that for Lewis ‘actuality’ is an indexical term. Its reference depends on the context of utterance, the world at which the utterance is made. Thus, as Lewis suggests, 'This makes actuality a relative matter: every world is actual at itself, and thereby all worlds are on a par. This is not to say that all worlds are actual—there’s no world at which that is true, any more than there’s ever a time when all times are present. The “actual at” relation between worlds is simply identity’ (Lewis 1986, p. 93).

The actualist, then, is objecting to this indexical analysis of actuality combined with the theses that there are other worlds and that these worlds are merely other regions of space-time. Even if Lewis were right about the existence of a multiplicity of disconnected regions of space-time, so the objection goes, they would all be part of the actual world. Modal theorists, though, are concerned with alternatives to actuality. Lewis’s hypothesis will not help us analyse modal terms and their cognates.\(^7\)

Lewis responds first by considering three theses affirmed by the spokesman for common-sense:

(1) Everything is actual.

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\(^7\)This objection to Lewis is made by Richards (1975), Haack (1977), Lycan (1979) and Armstrong (1989), among others. Lewis (1986) addresses the difficulty in chapter two, section 2.1 pp. 97-101.
(2) Actuality consists of everything that is spatio-temporally related to us, and nothing more (give or take some abstract entities). It is not vastly bigger, or less unified, than we are accustomed to think.

(3) Possibilities are not parts of actuality, they are alternatives to it. (Lewis 1986, p 99)

Lewis suggests that all three propositions are commonplaces. They are all on equal footing; but, Lewis suggests, they cannot all be true together—at least not if (1) is analytically true. If the first is analytic, the second is up for grabs. Given that they are both platitudes or commonplaces, though, Lewis believes that he is entitled to choose (2) as the more basic of the two. The choice Lewis makes, it is supposed, is just as (un)faithful to the convictions of the man on the street as the alternative. Both theorists accept (3). Both, to some extent, do violence to common-sense opinion. It therefore is no objection to Lewis’s thesis that he prefers (2) over (1).

Lewis’s defense is perhaps a little less decisive than he would have us believe, however. The second ‘platitude’ seems far less central to us than the first. Recall the argument put forward by Bigelow and Pargetter (1987). The argument, if successful, shows that it is epistemically possible that the actual world consists of island universes. Lewis (1992) considers a related argument himself:

(M)ightn’t there be a world of almost isolated island universes, linked only by a few short-lived wormholes? And mightn’t the presence of the wormholes depend on what happens in the islands? And then wouldn’t it have been true that if the goings-on in the islands had been just a little different, there wouldn’t have been any wormholes? Then wouldn’t there have been a world of altogether isolated universes? (Lewis 1992, p. 223)
If (2) is not a platitude after all, Lewis’s modal realism is a revisionary hypothesis in a way in which ersatz realism is not. Lewis admits that he is a little embarrassed by this predicament, but given the overwhelming advantages of his thesis, he thinks it is a spoils to the victor issue.

But does the fictionalist face the same embarrassment? It might seem at first blush that she does not. She is not, after all, committed to an ontology of worlds. Whether or not this difference between the realist and the fictionalist is enough to save the fictionalist from trouble, though, depends on the strength of the thesis she adopts. Certainly the tenability of the different varieties of fictionalism will depend on one’s attitude towards (1) and (2).

Consider first what the strong fictionalist might say. She can hold all three theses stated above. She can be an actualist and assert that everything that exists is actual. Moreover she will presumably say that this proposition—proposition (1)—is an analytic truth.

Where the fictionalist under consideration is going to find trouble is in her assessment of premise (2). Recall that, according to the strong thesis, Lewis’s modal realism is literally false. But remember also that the adherent of this stronger variety of (concrete) fictionalism is an anti-realist about possible worlds, and therefore accepts tenet (iii) of Lewis’s ontological thesis. The anti-realist denies only tenets (i) and (iv) of the ontological thesis. This kind of fictionalist, then, must accept that there is only one world and therefore there are no other
regions of space-time discontinuous with ours. She therefore faces the same unfortunate predicament faced by Lewis.9

The weaker variety of fictionalism that I prefer seems to me to come off much better—though it may not be immediately obvious that it does. The adherent of this more conservative variety of fictionalism can quite clearly admit that it is logically possible that other worlds—other isolated regions of space-time—exist. Moreover, she can consistently say that it is also epistemically possible that there are such isolated regions, thus avoiding the problem faced by Lewis and the less conservative fictionalist.

The weaker fictionalist is not home free yet, though. If she is to accept tenet (iii) of Lewis's ontological thesis—as I have suggested she should—along with the indexical analysis of actuality10, such regions of space-time would not be part of the actual world. Thus, according to this variety of fictionalism, proposition (1) is not analytically true. Indeed it might well be false. The adherent of this weaker kind of fictionalism, then, is not an actualist (or so it seems).

Fortunately, there is a way out for those committed to actualism. How? It's simple. I said in chapter 1 that both the agnostic and anti-realist about possible worlds (and hence the fictionalist) will accept tenet (iii) of Lewis's ontological thesis. Why? Because Lewis often seems to take 'world' to mean a maximally extended region of

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8The indexical analysis is, of course, compatible with there being only one world. See Hazen (1979) and Stalnaker (1987) Chapter 3 pp. 46-49.
9I don't pretend that this kind of consideration is decisive against this stronger variety of fictionalism. I do, however, think it provides some reason—indeed a good reason—for adopting the weaker kind of fictionalism I prefer. See §1.3 for further discussion of this issue.
10Don't think the problem can be resolved satisfactorily by rejecting the indexical analysis of actuality. There are very good independent reasons for adopting Lewis's analysis actuality. Hazen (1979), for example, offers semantic considerations in favour of the indexical analysis.
continuous space-time. (Indeed, his view often seems to require it.) Any variety of fictionalism should agree with him on that score. The theories will differ merely on their assessment of how many of them there are. To capture this thought, and to avoid certain complexities—particularly in regard to my distinction between the agnostic and the anti-realist—I suggested that the fictionalist will accept tenets (ii) and (iii) of the ontological thesis. But she need not—it was not a hard and fast rule. If the fictionalist is a committed actualist, and also an agnostic about other worlds, she has good reason to suspend judgment on tenet (iii) of the ontological thesis. This, then, provides us with the requisite solution to the problem at hand.

The fictionalist can still analyse modal truths in terms of Lewis's fiction. Of course, according to that fiction, there are no worlds with spatio-temporally discontinuous parts. But truth in fiction is not, after all, truth simpliciter. The fictionalist can thus adopt a kind of indexical analysis of actuality and retain her commitment to actualism.

§ 4.4 THE INCOMPLETENESS PROBLEM

Consider the following modal proposition:

(M) There might have been \( \kappa \) non-overlapping physical objects.

The realist, as we have seen, will analyse this as follows:

(R) There is a world containing \( \kappa \) non-overlapping physical objects.

\[\text{For further discussion of this problem, see Rosen (1990) section 7, pp. 341-344.}\]
This poses a special problem for a fictionalist like Rosen. In order to avoid paradox a concrete realist must hold that there is some unknown upper bound $K^*$ to the number of non-overlapping objects which inhabit the most populous worlds. For the realist then, $M$ has some definite truth-value, but we don't (and in principle could not) know what it is.\(^\text{12}\)

Consider next Rosen's analysis of $M$,

\[(RF) \text{ According to } PW, \text{ there is a world containing } K \text{ non-overlapping physical objects.}\]

The problem for Rosen is that nothing in the fiction implies that $K < K^*$. The story is incomplete. As a consequence, he will have to say that both $RF$ and $M$ are not true; the propositions are either false or truth-valueless. Thus, fictionalism and realism diverge with regard to some modal doctrine. This is not too great a cost. But there are other problems. Let's see why.

If the fictionalist's operator behaves like that used in a more general context, it would be most natural to say that $RF$ was false. The fictionalist could then retain the principle of bivalence. But given that $RF$ is false she should say that the modal proposition $M$ is also false. Moreover, she will presumably want to say that the following proposition is therefore true:

\[(M^*) \text{ It is not the case that there might have been } K \text{ non-overlapping physical objects.}\]

$M$ and $M^*$ are contradictories, after all. But this reduces the hypothesis to absurdity. If $M^*$ is true, then according to $PW$, there are no worlds containing $\kappa$ non-overlapping physical objects. But, ex hypothesi, the story was incomplete.

If, on the other hand, the fictionalist says that $RF$ is truth-valueless, $M$ will also be truth-valueless. The principle of bivalence is denied—both $M$ and $F$ are neither true nor false. Furthermore, if we assume, along with the realist, that statements like 'M and $M^*$' expresses a logical truth, it turns out that some of the logical connectives in the fictionalist language are non-truth functional. In this case we have a true disjunction with neither disjunct true. This is the option Rosen favours. Neither option is desirable.

Does the modified analysis avoid this consequence? I do not think it does, and it would be worth illustrating why. There is a parallel problem to overcome. Consider our fictionalist’s attitude towards $M$. For her, $M$ is equivalent to the following paraphrase:

\[(F)\] If $PW$ were true, there would be a world containing $\kappa$ non-overlapping physical objects.

Because $PW$ is silent with regard to the truth-value of $R$, we might want to say that $F$ is false. But if we do, the same reasons require us to declare the following proposition false as well:

\[(F^*)\] If $PW$ were true, there would be no world containing $\kappa$ non-overlapping physical objects.
and $F^*$, are not contradictory propositions. The fact that they are both false is compatible, for example, with Lewis's (1978) denial of the law of conditional excluded middle: $(p \rightarrow q) \vee (p \rightarrow \neg q)$. What is particularly troublesome, though, is the fact that the fictionalist is prepared to analyse the corresponding modal propositions accordingly. $M$ and $M^*$ must therefore both be false. Yet $M$ and $M^*$ are contradictories.

Perhaps the fictionalist could opt instead for a theory of conditionals like that proffered by Stalnaker (1968 & 1980). The theory countenances the conditional law of excluded middle. Stalnaker is however prepared to admit that there are some cases where the assumption seems rather implausible—cases not unlike that considered in the present context. In such situations we want to say that, given the antecedent, both the consequent and its negation seem just as likely. Neither possibility seems closer to the way things actually are than the other. In order to accommodate this fact, Stalnaker employs a theory of vagueness—specifically by using van Fraassen's theory of supervaluation (van Fraassen, 1966). The fictionalist, it seems, would have to do the same.

This technique, though, generates truth-value gaps for some important counterfactual conditionals. Presumably the fictionalist will assert that $F$ and $F^*$ are both truth-valueless—neither true nor false. Consequently, $M$ and $M^*$ will be truth-valueless also. Moreover, their disjunction is presumably a logical truth. So the fictionalist must allow that there are true disjunctions with neither disjunct true. Because $PW$ is incomplete, the modified fictionalist analysis faces precisely the same problem as that faced by Rosen. It is a problem not faced by the realist.
In chapter 1 I stated that one of the aims of this thesis was to find an adequate counter to concrete realism about possible worlds. It was noted that we wanted to do more than merely see whether or not a suitable alternative proposal is in the offing. We were in search of a 'paradise for philosophers' comparable to that offered by Lewis. We wanted it without the ontological cost.

It was noted that the ersatzer was not up to the task. While the ersatzer's ontology is more appealing than the concrete realist's, her analysis of modal terms is very similar. A theory that adopts a conceptual thesis that is almost identical to the realist's won't provide any advance in ideology. If the realist cannot reductively analyse some modal notion, neither can the ersatzer. If the realist cannot countenance some relative possibility that is also a logical impossibility, neither can the ersatzer. Given that the realist can reductively analyse the logical modalities, whereas the ersatzer cannot, the modal realist can be seen to hold the ideological high ground.

But ersatz realism is not the only thesis to compete with modal realism. There are theorists who espouse an alternative conceptual thesis to that adopted by the realist about possible worlds. If the thesis is to provide any challenge to the concrete realist, though, the conceptual thesis has to be a substantive one. The modal theorist can't leave her modal modifiers unanalysed, or else she won't be able to translate many natural modal idioms in terms of her simple modal
language. She may, of course, be able to provide some suitable extension to the language. But this would result in an undesirable proliferation of primitives.

The fictionalist adopts a conceptual thesis that differs significantly from the realist's. She analyses modal claims in terms of a theory, not a set of worlds. But the fictionalist seems to face the same predicament as the ersatzer. The fictionalist's operator—according to $PW$ and the counterfactual equivalent—is a primitive modal operator.

Thus, if we assume that modal realism does not lead to outright paradox, and that it has no unacceptable hidden implications, it might seem that the best we, the defenders of common sense, can do is disagree with Lewis's verdict that the benefits are worth their cost. Reductionist ambitions are admirable, but if they require an ontology as extravagant as that put forward by Lewis, the suggestion is ludicrous. Fortunately, though, the modal theorist can do better than this.

Rather than providing an alternative to modal realism—an alternative that succeeds in making the same reductive claims with a little less ontological extravagance—we might instead attempt to show that Lewis himself fails in his reductive endeavor. Many have tried to do just that.

Consider first an objection repeatedly made by William Lycan\(^1\). The objection runs thus: Lewis understands possibility as truth at some world, but, it is suggested, for him 'world' itself is a modal term. Since he is forced to stipulate the non-existence of impossible worlds in order to distribute truth values correctly, 'world' for him means possible world, and this it would seem, is to take modality as primitive.

The problem, however, is a spurious one. Lewis's ontological thesis tells us what there is, not what there might or might not be. The modal stuff arises only in the conceptual thesis. Lewis never defines what he means by the term 'world', preferring to take it as a primitive. But it is important to note that there is no modal component needed in his explanation. A world is just something like this world—and we all understand that. Perhaps Lewis could say a little more. He might, for example, say that a world is a maximally extended region of continuous space-time. But there is no modality there.

Lycan's objection, though, has a further element. Lycan suggests that nothing but the impossibility of round square objects keeps them from being located in a maximally extended region of continuous space-time. Lewis must stipulate that such objects don't exist in any world simply on the grounds that the existence of such objects is impossible. Thus, the need for a primitive modal component remains.

This suggestion, though, seems misguided. It amounts to no more than a denial of the conceptual thesis. For Lycan's objection to get a hold, we must agree that even if we accept the ontological thesis in its entirety, we might still legitimately ask whether such worlds are possible, and whether all that is possible is instanciated at these worlds. That's fair enough, but it is no reductio of the modal realist's thesis. Lewis, unlike Lycan, thinks there is no further question to be asked. The conceptual thesis gives us the canonical method for determining the truth-value of modal claims. No primitive modal notion is required to do that.

Lycan is not the only one to accuse Lewis of invoking a primitive modal component in his analysis of modality. Pigden and Entwistle
(forthcoming) have put forward the following objection: Lewis's principle of plenitude entails that spread worlds exist. What is a spread world? A world that infects logical space; a world such that 'once it is admitted as possible, it spreads through logical space and excludes all alternatives'. A world that contains a necessary existent is an example. Such a world rules out the possibility that there could be only three grains of sand—that there is a world that contains nothing more than these grains of sand. Obviously Lewis wants to rule spread worlds out of his ontology. But to do so would require him to help himself to some unanalysed primitive modal notion. He would have to assert that spread worlds were impossible, and there's an end to it. Moreover, no matter what kind of distribution of worlds we were committed to, we would still be required to make a similar assertion.

It strikes me, however, that the concrete realist has a straightforward response open to her. Lewis's principle of plenitude, it will be maintained, does not entail the existence of spread worlds. On the contrary, it entails their non-existence. As was noted in chapter one, the principle of plenitude is closed under a principle of recombination. For any collection of individuals from any number of worlds, there is a single world containing any number of duplicates of each. If one of the numbers Lewis is quantifying over is 0, there can be no necessary existents. Because the principle of plenitude can be stated non-modally, Lewis can provide a fully reductive analysis of the logical modalities.

Finally, consider an objection considered by David Armstrong (1989), John Bigelow and Robert Pargetter (1990), and Peter Menzies (1992). Remember that Lewis stipulates that regions of space-time that are
isolated from one another are different worlds. This is Lewis's method of demarcation—the way we can distinguish one world from another. It follows as a consequence, then, that any region of space-time isolated from ours is non-actual. This, Lewis admits, is a revisionary hypothesis, but not implausible.

Against Lewis, many have suggested that the possibility of a single world containing spatio-temporally discontinuous regions is a possibility that cannot be given up. Bigelow and Pargetter, it will be recalled, argue that it is epistemically possible that the actual world consists of island universes.

The argument presents Lewis with a dilemma. Either Lewis can deny this possibility, a denial that even Lewis admits is hard to stomach, or he can accept that there might be island universes that are parts of the one world. But this would require him to employ some primitive modal notion to distinguish the actual world from the other non-actual, merely possible worlds. Lewis would fail to meet the reductive ambitions of his theory.

The argument is hard to resist. Modal realism is in trouble. But Lewis can still adopt the first horn of the dilemma (which in fact he does) rather than the second. We must therefore look further afield if we are to show that Lewis's adoption of the ontological thesis is misguided given his reductionist goals.

§ 5.2 UNDERPINNING REDUCTIONISM

Why does Lewis take offense at the ersatzer's analysis of modality? It can't be because the analysis is circular. Circularity is not necessarily a bad thing. Many have argued, for example, that the secondary qualities
are response-dependent concepts. Such analyses make a circular appeal to the concept being analysed. They are still illuminating, however. They are still analyses. But it seems unfair to accuse the ersatzer of even this much. There are many modal notions. If the ersatzer can reduce them to but one, she can hardly be charged with circularity. There is, I maintain, another reason underpinning this rejection.

Lewis purports to be offering a conceptual reduction of modality. His aim is to reduce all modal facts to non-modal ones; to reduce what might have been to what is. When do we consider that a conceptual reduction, like that proffered by Lewis, succeeds in making a significant analytic advance? Answer: When it restricts the number of notions we must accept as primitive; when it simplifies our total theory, making it more elegant, unified, economical, and aesthetically pleasing. Lewis explicitly states that this is the motivation behind his proposal. Consider the following:

Why believe in a plurality of worlds?—because the hypothesis is serviceable, and that is a (good) reason to think that it is true ... We have only to believe in the vast realm of possibilia and there we find ... the wherewithal to reduce the diversity of notions we must accept as primitive, and thereby to improve the unity and economy of the theory that is our professional concern—total theory, the whole of what we take to be true. (Lewis 1986, pp. 3-4).

Modal realism, at first blush, seems to do best at meeting this goal. When analysing the logical modalities, the ersatzer makes an appeal to a primitive modal notion, the modal realist does not.

But the logical modalities are not the only modalities. There are the other alethic modalities, such as the physical and the metaphysical; there are some broader modal notions, such as the deontic,
doxastic, epistemic and temporal modalities; and there are other notions that are intimately related, such as verisimilitude, causation and counterfactual situation. An ontology of *possibilia* is supposed to be a paradise for philosophers because it enables us to reduce all such notions.

A thoroughgoing reduction of the logical modalities, then, is not all the modal theorist wants. If she aims to simplify her total theory—if she wants to restrict the notions she must accept as primitive—she should hope to provide a thoroughgoing reduction of all the relative modalities and their cognates as well. A conceptual thesis that reduced one variety of modal notion, yet left unanalysed a plethora of others, would seem to be an unsatisfactory thesis indeed.

So does Lewis require any unanalysed modal notions? It might seem that he does not. Like the logical modalities, a multiplicity of relative modalities can also be understood as some sort of restricted quantification over possible worlds and individuals. This, it would seem, is all that is needed to effect a reduction of such notions. But is it?

Let me consider but one of the relative modalities—the fictional modalities—in which it is clear that there can be no possible worlds reduction. The importance of such considerations will become clearer as we go on. When is a proposition possible or necessary relative to a certain fictional story? Lewis (1978) considers three competing accounts. Very roughly, they can be stated as follows:

(i) A proposition $p$ is necessary relative to a fiction $F$ iff $p$ is true in all worlds where $F$ is told as known fact.
A proposition $p$ is possible relative to a fiction $F$ iff $p$ is true in some world where $F$ is told as known fact.

(ii) A proposition $p$ is necessary relative to a fiction $F$ iff there is a closer world in which $F$ is told as known fact and $p$ is true than any world in which $F$ is told as known fact and $p$ is false.

A proposition $p$ is possible relative to a fiction $F$ iff there is no world in which $F$ is told as known fact and $p$ is false that is closer to the actual world than a world in which $F$ is told as known fact and $p$ is true.

(iii) A proposition $p$ is necessary relative to a fiction $F$ iff whenever $w$ is one of the collective belief worlds of the community of origin of $F$, there is a closer world in which $F$ is told as known fact and $p$ is true than any world in which $F$ is told as known fact and $p$ is false.

A proposition $p$ is possible relative to a fiction $F$ iff whenever $w$ is one of the collective belief worlds of the community of origin of $F$, there is no world in which $F$ is told as known fact and $p$ is false that is closer to the actual world than a world in which $F$ is told as known fact and $p$ is true.

Lewis rejects the first analysis. Why? As we have seen, there are many truths in fiction that are neither explicitly stated, nor deducible from what is explicitly stated. This fact is not captured by analysis (i).

For various reasons, Lewis leaves it up to the reader to decide which of the remaining two analyses of fictional necessity more
adequately account for the notion. It is my contention, though, that neither will do. They both fail to capture the essence of the concept for the very same reasons.

Both (ii) and (iii) require us to examine worlds where the fiction is told as known fact. Lewis makes this stipulation in order to dodge Kripke’s objection that the story might come true by accident, yet be as fictional as ever. As Alex Byrne (1993) has noted, though, there are many fictions in which there is no intelligent life and so no one can either know or tell the tale. He illustrates his claim by considering Iris Murdoch’s *The Book and the Brotherhood*. How could we modify our analysis to accommodate this fact? The best we can do, it seems, is to consider all and only worlds in which what is explicitly stated in the fiction is true, and restrict our attention after that. The Kripkean problem returns.

There is, however, another more common objection to the whole approach of analysing truth in fiction in terms of possible truth. Anyone who adopts the approach has a serious problem when analysing impossible fictions—fictions in which impossible propositions are true. A Modal Realist, for example, seems compelled to say that in such cases there are no worlds in which the fiction is true, and as a consequence, either every proposition is vacuously true according to the fiction or nothing whatsoever is true according to it. But this is surely wrong.

Lewis admits that impossible fictions present a serious problem for the possible worlds analysis of truth in fiction. His proposal for dealing with impossible fictions is to divide them into consistent fragments, with truth in such fictions being identified with truth in at least one fragment. As many have pointed out, however, if we deny
that impossible propositions can be true in a fiction, too much would be lost.\(^2\) The proposal seems fundamentally flawed.

Fictions in which the inconsistency is a minor one are treated fairly well on the Lewisian analysis, but there are many stories in which the contradiction is not eliminable. Countless fictions have an impossible truth as a central theme, essential to any fragment of the story. We don't want to say, as Lewis does, that the notion of fictional truth has no interesting application in such contexts. It surely does. As Greg Currie (1990) observes, a story which has as its central theme the main character's refutation of Gödel is not treated well on the Lewisian account. The whole point of the story would be lost if the refutation were taken out. The moral would be lost if it were replaced by a subtly different but invalid proof.

Consider next children's stories in which there are animals that talk, and science fiction stories in which time travelers change the past. Such things are impossible, but they are true according to many stories. Children can manage without difficulty to tell us what is true and what is not in the stories of Beatrix Potter and H. G. Wells. Why shouldn't we? The objection is, I think, decisive against a possible worlds analysis of truth in fiction.

Recall that in § 3.2 it was noted that Lewis saw a close connection between counterfactual truth and fictional truth. Indeed, it was proposed that we adopt a variant of Lewis's counterfactual analysis. Given that Lewis has a problem, then, it might be thought that the kind of fictionalism that I have advocated here is in trouble also. Not so! Lewis's proffers a two step analysis of truth in fiction. Consider again the following proposition:

\(^2\)See, for example, Currie (1990), Rosen (1990) and Byrne (1993).
According to the novel *Wuthering Heights*, there is a ghost that haunted Heathcliff on the windy moors.

Lewis proffers the following analysis of (1):

If the novel *Wuthering Heights* were told as known fact, there would have been a ghost that haunted Heathcliff on the windy moors.

He then analyses (2) in terms of something like (3):

There is a closer world in which the story *Wuthering Heights* is told as known fact and there is a ghost that haunted Heathcliff on the windy moors than any world in which *Wuthering Heights* is told as known fact and there is no ghost that haunted Heathcliff on the windy moors.

It should be noticed that the objection given above is not an objection to the move from (1) to (2), but rather to the move from (2) to (3). If I am right, counterfactuals with impossible antecedents should present us with the *very same* difficulty. It seems to me it does. Any non-philosopher who thought that for some story *F*, 'In *F*, 2 + 2 = 5' is non-vacuously true, will, for the very same reasons, believe that the conditional 'If *F* were true, it would be the case that 2 + 2 = 5' is true.
Because the fictionalist does not make the controversial move from (2) to (3), the problem is the realist's only. So the fictionalist's primitive modal operator is one the realist can't adequately analyse either. We might therefore stop and wonder how much of a defect it is for the fictionalist. But the realist's problems don't stop there. The fictional modalities are not the only modalities to present her with a problem.

Perhaps the most commonly discussed modalities besides the logical are the epistemic and doxastic modalities. They are possibilities for a given individual. An extensional analysis of such modalities was first proffered by Jaakko Hintikka (1962) and later adopted by Lewis, amongst others. Roughly put, Hintikka suggests that a given proposition \( p \) is doxastically necessary for an agent \( a \) at a world \( w \) iff \( p \) is true in all doxastic \( a \)-alternatives to \( w \), or in other words, true in all worlds compatible with what \( a \) believes at \( w \). Likewise, it is suggested that a proposition \( p \) is doxastically possible for an agent \( a \) at a world \( w \) iff \( p \) is true in some doxastic \( a \)-alternatives to \( w \). The analysis provides

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3This is not to say that there are no problems associated in the move from (1) to (2). Unfortunately there are. There are novels and plays written in the first person in which we are meant to take what is said with a grain of salt, though we are never explicitly told to do so in the fiction. Perhaps what is said is exaggeration, perhaps it is a lie. What is true in such novels is \textit{not} what is true at the worlds in which all that is explicitly stated in the fiction is true. At such worlds, what is said is not exaggeration or lie, it is, \textit{ex hypothesi}, the truth.

Consider the play 'Who's Afraid of Virginia Woolf?' by Edward Albee. The play revolves around two academic couples: one, George and Martha, the other Nick and Honey. During the course of the play, George and Martha frequently speak of an apparent son. But as the play evolves it becomes clear that George and Martha have no children. They have, instead, built a fantasy around their alleged son; sometimes to support one another, but more often than not to manipulate one another. This is never made explicit in the play, however. The closest we come to any direct confirmation of this fact is when Nick nervously inquires: 'You couldn't have any then?' to which George responds: 'We couldn't have any.' On the Lewisian analysis this important fact is lost. According to Lewis, George and Martha have an adopted son. This is \textit{not} a problem for the possible worlds analysis of counterfactuals. It is a problem though—a problem for the counterfactual analysis of fictional truth; thus challenging the move from (1) to (2). For a partial solution to this problem, see Postscript D, 'Truth in Fiction' in Lewis (1983).
us with an extensional semantics for the doxastic modalities. Moreover, it allows us to characterise the content of our belief. Hintikka gives a analogous account of propositions about attitudes like knowledge and desire.

One assumption that must be made by this kind of reductionist, however, is that the set of epistemic and doxastically accessible worlds for any given agent are a subset of the logically possible worlds. Thus, if a given 'proposition' is not logically possible, then it is not epistemically possible for any agent at any time. The assumption might seem to be an attractive one to make. But once it is made, certain well-known problems present themselves. I will consider two:

(i) People can and often do have impossible beliefs. Many ancient Greeks believed that water was not H₂O⁴; as children, many of us believed that Santa Claus existed; many mathematicians of the last century believed that naive set theory was true. As we have subsequently discovered, though, some, if not all, of these propositions are logically impossible. The analysis, then, commits us to the view that any one who believes the logically impossible would either believe everything or nothing at all. This is absurd.

A similar problem arises with regard to propositions that we have epistemic access to. It is admitted that we cannot know anything that is logically impossible, but logical impossibilities might still

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⁴Thales, for example, believed that the underlying substance of the universe was water. Water, being the ‘source of all things’ could not itself be composed out of anything more basic. Heraclitus, rejecting the material monism of his contemporaries, believed that there were three basic cosmic components: earth, water and fire. Everything that existed was composed out of these elements. None could be further reduced. Both Thales and Heraclitus, then, believed that water was not H₂O.
be epistemically possible—possible for all we know. Recall that a proposition $p$ is epistemically possible iff the corresponding negated proposition, $\neg p$, is not known by us. In ancient Greece, it was not known that water was $\text{H}_2\text{O}$; as children, it was not known that Santa Claus did not exist; last century mathematicians did not know that naive set theory was false. The doxastic necessities above, then, are epistemic possibilities. The reductionist account, though, will not allow this.

(ii) If the worlds compatible with what a knows or believes are all logically possible worlds, then, the analysis commits us to an assumption of logical omniscience—that is to the assumption that every one knows and believes all that is entailed by what they know and believe. Consider the case of knowledge: if $a$ knows that $p$, and $p$ entails $q$, then every $p$-world is a $q$-world. Thus $q$ must be true in every epistemic $a$-alternative to $w$ and so, *ex hypothesi*, $a$ knows that $q$. But it is patently obvious that we do not know everything that is entailed by what we know.

One simple way out of these difficulties is to suggest that the epistemically and doxastically accessible worlds are not a subset of the logically possible worlds. This is the solution Hintikka adopts. As he suggests, "(t)his means admitting 'impossible possible worlds', that is, worlds which look possible and hence must be admissible as epistemic (and doxastic) alternatives but which none the less are not logically possible. Admitting them solves our problem for good" (Hintikka (1975) p. 477). This solution is not open to a modal reductionist, however.
The reductionist’s aim is to reduce all kinds of possibility to facts about what exists. Modal facts are reduced to facts about worlds and individuals. If the modal reductionist were to admit that there was a proper intersection\(^5\) between the epistemic, doxastic and logically accessible worlds, then reduction would no longer be possible. There would exist one big set of worlds. The different varieties of modality would be explained in terms of truth at a proper subset of these worlds. A proposition \(p\) would be logically possible (necessary) iff \(p\) were true at some (all) logically possible worlds. Because the logically possible worlds would not be all the worlds there are, we would have to resort to some primitive modal notion in order to distinguish them from the worlds that are not logically possible. There would be no basic modalities. There could be no reduction.

This is not to suggest, however, that there is no possibility of the reductionist overcoming the aforementioned difficulties. Many such attempts have been made. Some resort to two-dimensional modal logic for a way out. Kripke and Putnam have put forward well-known arguments which seem to imply that some necessary truths are only knowable \textit{a posteriori}. This contradicts the analysis of epistemic and doxastic possibilities mentioned above. What Stalnaker and others observe, however, is that the content of such statements depends on the context an individual is in when they are uttered. We understand the content of what is said without knowing the conditions under which it is true. Others point out that belief and knowledge are not closed under deduction. It's possible to believe that \(p\) and believe that \(q\) and yet not believe that \(p\) and \(q\). Others still resort to the meta-

\(^5\)Let us say that there exists a proper intersection between two sets \(S_1\) and \(S_2\) iff there is an element contained in \(S_1\) that is not contained in \(S_2\) and there is an element contained in \(S_2\) that is not contained in \(S_1\).
language, suggesting that any apparently inconsistent belief is in fact the consistent belief that the sentence uttered expresses a true proposition.

Such observations allow the reductionist to avoid many of the supposed problem cases alluded to above. But it should be clear that she can’t avoid them all. It’s easy to think of intuitive counter examples. Consider the dialetheist. She has the explicit (albeit false) belief that some contradictions are true and that some propositions are both true and false. Graham Priest, for example, has seriously entertained this idea. The reductionist, though, is at a loss when asked to specify the content of that which Priest entertains. Two-dimensional modal logic won’t help—the dialetheist’s considerations are a priori considerations. The content won’t vary from context to context. Pointing out that beliefs aren’t closed under deduction won’t help—the dialetheist doesn’t have two inconsistent beliefs. She believes the inconsistent. Going meta-linguistic helps, but not much—the dialetheist thesis seems intuitively to be one that could be believed by all of us, no matter what language we spoke. But if the dialetheist merely has the belief that ‘some contradictions are true’ expresses a true sentence, this possibility is ruled out.

To conclude: even if we admit that Lewis can analyse logical possibility without recourse to any primitive modal notion, it seems there are other modal concepts that must still be taken as primitive. Having noted the multifarious nature of our modal notions, then, we might reduce some in terms of others. Philosophers have attempted to reduce a wide variety of folk psychological notions—belief, desire, suspicion, hope, knowledge, value, assumption, fear, etc.—to just two:
belief and desire. Such analyses don't reduce the folk psychological notions to something else altogether, but they are reductive analyses nonetheless. If the modal theorist could do the same, perhaps requiring only one unanalysed modal primitive, and analysing all others in terms of it, the resulting ideology would, it seems, compare favourably to that put forward by Lewis.

§ 5.3 FICTIONALISM AND REDUCTIONISM

The fictionalist's primitive modal operator—according to PW—now seems less of a concern than was first thought. Yet it would seem even less of a concern if it were the only modal operator the fictionalist required. The fictionalist has certainly made some progress towards achieving this goal. As Rosen notes, the fictionalist has "reduce(d) a wide variety of modal notions to this one. Now this may not seem as impressive as a thoroughgoing eliminative reduction. But it remains a non-trivial analytic advance. No similar claim can be made, for example, by those who take the logician's standard modal operators as primitive." (pp. 344-5).

But the fictionalist can say much more to convince us that she is in a better position than the realist. If the fictionalist were to exploit only the modal realist's hypothesis when analysing modal terms, it would seem that she would run into exactly the same problems encountered by the realist. To illustrate, we might ask how the fictionalist would analyse the doxastic possibilities. Perhaps she could continue to exploit the realist's hypothesis and say the following:
A proposition \( p \) is doxastically possible for an agent \( a \) iff

according to \( PW \), \( p \) is true in some doxastic \( a \)-alternatives.

But if what I have said previously is correct, such an analysis is in trouble. If we are using Lewis's fiction, this analysis won't capture the meaning of the doxastic modalities any more adequately than Lewis has. We need a fiction that postulates an ontology quite different to that postulated by the concrete realist if we are to achieve that goal.

Fortunately, the fictionalist does not need to exploit only Lewis's thesis. When analysing the doxastic modalities, it would seem more appropriate to turn instead to Hintikka's hypothesis. Thus she might say instead that:

A proposition \( p \) is doxastically possible for an agent \( a \) iff

according to Hintikka's hypothesis of a plurality of worlds (\( HPW \)), \( p \) is true in some doxastic \( a \)-alternatives.

We should notice two things about this kind of approach. First, we no longer have the problem of accounting for the content of inconsistent beliefs. Nor are we committed to an assumption of logical omniscience. Hintikka is committed to an ontology of logically possible and impossible worlds, so the problems dissolve. Second, if the doxastic \( a \)-alternatives were all the worlds there were according to the story under consideration, and the postulates of the story fully and non-circularly determined which worlds would exist, we wouldn't
need to make any further appeal to some unanalysed notion of doxastic possibility.  

Unfortunately, though, Hintikka's hypothesis doesn't completely meet our needs. The fictionalist will need to exploit a different fiction with every new modal context. We will need one fiction for an analysis of the logical possibilities, a different fiction for an analysis of other varieties of possibility, one for the epistemic, another for the deontic, perhaps another still for the nomic. Indeed, given the great variation between the epistemic and doxastic contexts (of different people at different times), we might suspect that the appropriate fictions will never be written.

Perhaps it might seem that this is itself an insoluble problem for the fictionalist. Perhaps the fictions needed could never all be written. Consider a similar objection David Lewis (1992) raises against a different variety of modal fictionalism—the many worlds fictionalism advocated by David Armstrong (1989). According to this variety of fictionalism, the possible worlds themselves are fictions. Each and

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6It is worth considering an objection to impossibilia raised by Lewis in a footnote. Lewis presents us with the following reductio: Consider a world in which both $p$ and $\neg p$ are true. We can therefore make the claim that 'In some world $w$, both $p$ and $\neg p$'. Because the order of restricting modifier and connectives makes no difference to the truth value of a sentence, this should be equivalent to saying, 'In some world $w$, $p'$ and 'Not in some world $w$, $p'$'. To quote Lewis, there is no difference between a contradiction within the scope of the modifier and a plain contradiction that has the modifier in it. So to tell the alleged truth about the marvelously contradictory things that happen ... (at some world) is no different from contradicting yourself'. The objection, however, does not pose a threat for the fictionalist. Her story prefix enables her to leave room for worlds in which contradictions are true—according to some fiction. Consider the following claim made by the fictionalist: 'According to HPW, there is a world $w$, in which $p$ and $\neg p$ are true'. Clearly this is not equivalent to the claim: 'According to HPW, there is a world $w$, in which $p$ is true and Not according to HPW, there is a world $w$, in which $p$ is true'. Lewis' objection tacitly assumes realism about possible worlds. The fictionist's operator is not a restricting modifier, limiting the domains of quantification to a certain subset of all there is. Hence, the problem dissolves.
every possible world is a story about the world. They each constitute a way the world might have been. The objection would seem to have some bite for the kind of fictionalist I am envisaging:

The immediate problem with the many-fiction alternative is that the many fictions don't exist. Nobody has even once told a fully detailed story about what goes on in an alternative world (except maybe for stories of very simple worlds). Still less have our busy authors given us the countless such stories that we need. The world stories are no less fictitious than the worlds themselves. (Lewis (1992) pp. 220-221)

The kind of fictionalist under consideration would appear to face a similar problem. There aren't the many fictions about the many worlds in which all and only those things we believe are true. Nor will there ever be.

But this observation should not be telling against the variety of fictionalism we are considering (nor for that matter, the variety put forward by Armstrong). To see this, consider again the simpler style of fictionalism Rosen puts forward. Because he is offering a conceptual analysis of the logical modalities, the analysis should be knowable \textit{a priori}. Thus, we should not have to rely on Lewis to write \textit{On the Plurality of Worlds}, and then refer to the work to find out what the modal truths are. We could come by the postulates ourselves with a little introspection, and once we had we would presumably notice that the kind of bi-conditionals Rosen offers are true.

Lewis's fiction did not need to be written for fictionalism about possible worlds to be a plausible hypothesis. Nor do all the others we might hope to exploit. They don't even need to be conceived. We
could still come by such a conception if we thought hard enough about it. That's all the fictionalist wants.

So my point is this: the fictionalist takes the fictional modalities as primitive. But so must the realist. This might not seem to be a devastating blow for the realist. He can provide a thoroughgoing reduction of the logical modalities. These are the main interest of the modal theorist. Fictional possibilities are neither here nor there.

Because the fictionalist reduces the logical to the fictional, however, the focus has changed. Ideologically, the realist and the fictionalist are on a par. Because neither the realist nor the fictionalist can further reduce the fictional modalities, they would seem to inherit the same number of modal primitives. If the reductionist's aim is only to restrict the number of primitives required in his total theory, the realist cannot be seen as having made any significant ideological advance over the fictionalist, despite her thoroughgoing reduction of the logical modalities.
CONCLUSION

Quite generally, modal fictionalism is the thesis that possible worlds are fictitious entities of some kind or other and that the fictions about such entities are useful in so far as they are an aid to the analysis of our modal idioms. This essay should be seen as an attempt to defend a particular variety of modal fictionalism; a defense that falls into two main parts. The first—comprising chapters 2 and 3—examines the different varieties of modal fictionalism and defends a modified version of the thesis. The second part—comprising chapters 4 and 5—contrasts modal fictionalism with modal realism.

§ 6.1 COMPARING FICTIONALISMS

In chapter 2, I consider two problems for both Armstrong’s and Rosen’s varieties of fictionalism. The first is a semantic problem. The fictionalist’s analysis of our modal language does not obey the following principle of substitutivity: if \( P \) is some arbitrary modal claim, and \( P^* \) is the fictionalist’s paraphrase of \( P \), it should be possible—in the right context—to substitute or replace any occurrence of \( P^* \) with the corresponding modal claim. Moreover, it should be possible to do the converse, to substitute any occurrence of \( P \) with the fictionalist’s paraphrase \( P^* \). It has been my contention that this principle does not hold in modal contexts (i.e. when considering iterated modalities) and that this is a significant problem for the fictionalist.

The second and more worrying difficulty takes the form of a dilemma: either the fictionalist is committed to an ontology of worlds, in which case she is a modal realist of sorts, or else her language
inherits a plurality of modal primitives and hence would provide no real analytic advance on a theory that simply takes the standard modal operators as primitive.

In chapter 3 I provide a modest revision of the fictionalist program that overcomes the qualms raised in Chapter 2. The objections prove instructive, resulting in an analysis that is both appealing and true to the spirit of the fictionalist's proposal. (The analysis is compared to a similar analysis given by Pettit and Menzies.) The analysis is as follows: $M \iff [(P \Box \rightarrow W) \# W_\oplus]$ where $W$ is the realist's non-modal paraphrase of $M$ and $W_\oplus$ is the proposition that makes the fictionalist's analysis sensitive to truth in the actual world. The truth conditions for the connective '$\#$' are determined by the content of $W$. If, for example, an existential quantifier is used, $\#$ is interpreted as the connective 'v'. If, on the other hand, a universal quantifier is used, $\#$ is interpreted as the connective '&'.

Some problems for the thesis are considered. But they are problems for all fictionalists alike, and thus it is concluded that this modified fictionalism is preferable to other varieties on offer.

§ 6.2 FICTIONALISM AND REALISM

Modal fictionalism—appropriately modified—seems to be entailed by but not entail modal realism. As a consequence, one might expect that all problems for the realist—with the exception of the ontological problem—are likewise problems for the fictionalist. I show that this is not the case in chapter 4. Many problems for the realist can be avoided by the fictionalist. I consider many problems for both the realist and
the fictionalist relating to counterfactual situations, epistemology, and actuality.

It might be expected that certain ideological advances made by the realist are not available to the fictionalist. The modal realist can be seen as making a trade-off between ontology and ideology—ontological inflation for the sake of conceptual reduction. The realist makes extravagant ontological claims, but her thoroughgoing reduction of the logical modalities is supposed to more than compensate for this fact. In Chapter 5 I hoped to show why it does not.

The modal realist hasn’t done away with modal primitives altogether. If our aim is to restrict the number of primitives in our total theory, the possibility is left open for the modal theorist to provide a reduction of a wide variety of modal primitives in terms of others. If the number of primitives that remain are equal to or less than those required by the realist—all else being equal—the resulting ideology would seem preferable. I have considered one such thesis, modal fictionalism, and suggested that, compared to the realist’s thesis, it has the following advantages:

(i) The fictionalist requires a less extravagant ontology. The fictionalist is not committed to the existence of worlds.

(ii) The fictionalist requires no more modal primitives than those required by the realist.

(iii) The fictionalist can provide an intuitively plausible analysis of the relative modalities. The realist cannot.
Contrary to given opinion, then, recourse to a primitive modal component should not be viewed as a significant defect. No-one yet has done away with modal primitives altogether, but we can still provide a reductive analysis of modality. (We can reduce the wide variety of modal notions to one.) The modal fictionalist has done just that. The analysis compares favourably with the realist's.
Harold Noonan, in his paper 'In Defence of the Letter of Fictionalism' (1994), puts forward an alternative solution to the problem of ontological commitment. The solution is significantly different to those discussed in the main body of this essay. As will become clear, it warrants much more consideration than I can afford here. Noonan's insightful discussion sheds much light upon certain aspects of the discussion thus far.

Noonan's contention is that the original argument against the fictionalist is unsound. Not surprisingly, I disagree. But this is not to suggest that Noonan has not seen a way out of the ontological problem. Indeed, I think he provides just that. Noonan—like Menzies and Pettit and myself—offers an alternative fictionalist analysis of modal propositions that does not commit him to an undesirable ontology of worlds. It is my contention, though, that there are certain considerations that should lead one to prefer the fictionalism outlined in § 3.2 over Noonan's particular variety of fictionalism. But I am not altogether happy with this conclusion. The ironic upshot of Noonan's discussion, it seems to me, is that it might actually give one reason to abandon fictionalism altogether.

Noonan considers a slightly different version of the ontological argument—the argument given in Rosen (1993)—than that put
forward in chapter 2. For ease of explication, then, I will present (a slightly modified version of) Rosen's argument.

(i) Possibly $p$ iff according to $PW$, at some world, $p$

Necessarily $p$ iff according to $PW$, at all worlds, $p$.

(ii) There is only one world.

(iii) Necessarily, it is contingent that Kangaroos exist.

(iv) For all worlds $w$, at $w$ there is a world $w^*$ at which Kangaroos exist and world $w^{**}$ at which they do not.

(v) At all worlds there are many (at least two) worlds.

(vi) According to $PW$, for all worlds $w$, at $w$ there is a world $w^*$ at which Kangaroos exist and world $w^{**}$ at which they do not.

(vii) According to $PW$, at every world, there are many worlds.

(viii) Necessarily, there are many worlds.

(ix) Therefore, there are many worlds.

Premise (i) is merely a statement of the fictionalist's translation scheme. (ii) is the anti-realist's thesis—a thesis that motivates the fictionalist's proposal. It is hoped that the thesis is at least compatible with the fictionalist's analysis of modal claims. (The argument aims to show that it is not.) (iii) is a modal claim that the fictionalist should hope to be able to translate. (iv) is the realist's translation of (iii), but (perhaps unsurprisingly) this seems to entail (v). The fictionalist, in the course of analysis, will prefix the realist's translation of (iii), thus yielding (vi). But this entails (vii), which is just the fictionalist's translation of (viii). Thus the fictionalist is committed to the necessary existence of worlds. Worse still, by making use of the basic modal
axiom \( \Box p \supset p \)’, we can deduce (ix) from (viii). The fictionalist, it seems, is committed to the existence of worlds.

Noonan believes the argument contains a false premise. His prognosis is that the informal Lewisian translation (iv) of (iii) is false. The correct translation, it is maintained, does not entail (v). To see this, he urges us to consider carefully the appropriate rules of translation given in Lewis (1968). According to the proposal in § 2 of that paper, the correct translation of (iii) is:

\[(iv)^* \forall w(W_w \supset (\exists w^*(W_w^* \& \exists x(Iw^* \& Kx)) \& \exists w^{**}(W_w^{**} \& \neg \exists x(Iw^{**} \& Kx))))\]

The translation of (viii), on the other hand, is:

\[(v)^* \forall w(W_w \supset \exists w^*(Iw^*w^* \& W_w^* \& \exists w^{**}(Iw^{**}w^*w^* \& W_w^{**} \& w^* \neq w^{**}))\]

But (iv)* does not entail (v)*, as the argument requires. In fact, on a literal reading of Lewis (1968), it turns out that it is necessary that there is only one world. Problem solved!

To put the point a little less formally, Noonan maintains that (vi) is not the correct translation of (iii), because it contains a restricting modifier that should not be there. The first occurrence of the modifier ‘at w’ should be eliminated (according to the translation scheme found in Lewis (1968)). The correct translation of (iii), therefore, can be expressed as follows: for all worlds \( w \), there is a world \( w^* \) at which Kangaroos exist and a world \( w^{**} \) at which they do not. This proposition does not entail (v) (that at all worlds there are many (at least two) worlds). Indeed, we must maintain that there is only one
world at every world if we are to be faithful to Lewis's (1968) theory (see postulate 2 and postscript A).²

Noonan's suggestion is an interesting one, but it is not—despite Noonan's protestations to the contrary—a defense of the letter of fictionalism³. The suggestion put forward in Rosen (1990) was that the fictionalist adopt, for the purpose of analysis, (a modified version of) Lewis's *On the Plurality of Worlds* (1986), not Lewis's paper 'Counterpart Theory and Quantified Modal Logic'. Lewis states that he believes that it is necessary that there are several worlds, and he tells us that several worlds are never in one world. So how can Lewis himself resolve this seeming contradiction. The answer is to be found in his (1986) discussion of quantifiers and restricting modifiers (pp. 5 - 6 (1986)). His claim there is that restriction of quantifiers is a contextual affair. Restrictions should be ignored where they do violence to what is said. Consider the following:

(W)hile our modifiers tend to impose restrictions on quantifiers, names, etc., a lot is left up to the pragmatic rule that what is said should be interpreted so as to be

²I stated the problem for the fictionalist as follows:
(i) Most of us agree that there are other ways the world might have been. The realist, though, says something more: every way the world might have been is a way that some world is.
(ii) Because the accessibility relation between worlds is both reflexive and symmetric, according to PW, the proposition that there is a plurality of possible worlds is true at all worlds.
This, it was supposed, was simply the realist's translation of the modal proposition that it is necessary that there are many worlds, (a proposition the fictionalist seemed committed to holding as well). Noonan, quite reasonably, faults my translation of the modal claim in question.
³While Noonan does not seem to recognize that Lewis (1986) does (at least implicitly) provide a way out of the difficulty presented above—namely that of providing a translation scheme that accommodates the necessary existence of worlds—he does recognize that the realist can provide such a translation (see footnote 4). Noonan's suggested amendment, though, is not that adopted by Lewis.
sensible. If that means adding tacit restrictions, or waiving some of the restrictions imposed by our modifiers, then—within limits—so be it. (OPL p. 6)

It seems, then, that Lewis’s (1986) translation of this controversial proposition—necessarily there are several worlds—does not turn out to be false, as is implied by Noonan’s literal reading of Lewis (1968). Nor does it involve a relational ‘at’ modifier, as is suggested by Menzies and Pettit (1994), and at least alluded to by Rosen (1993) and myself. Instead, the translation will be as follows:

\[(v) \quad \forall w (Ww \to \exists w^* \exists w^{**} (Ww^* \& Ww^{**} \& w^* \neq w^{**})) \]

And the vacuous initial quantifier drops out to yield:

\[\exists w^* \exists w^{**} (Ww^* \& Ww^{**} \& w^* \neq w^{**})\]

So Noonan has not vindicated Rosen’s original fictionalist proposal. He has, however, offered the fictionalist a natural means for resolving the ontological problem. We thus have on the table two competing ways to resolve the problem. Good news for the fictionalist. The only question the fictionalist need attend to now is whether or not there are any reasons to prefer one over the other. I think there are.

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4Thanks to David Lewis for bringing this point to my attention. In conversation Lewis has stated explicitly that this is his preferred translation of this tricky modal claim. There is, however, a residual worry for a realist like Lewis that would be worth raising here. Given that the realist asserts that there are many worlds, she will probably want to leave room to assert—in some contexts—that if grass were green, there would be many worlds. Ordinarily, Lewis would translate such claims roughly as follows: there is a closer world to the actual world in which grass is green and there are many worlds than any world in which grass is green and it’s not the case that there are many worlds. But that can’t be what the realists asserting (because it’s false). Yet it seems impossible to eliminate the restricting modifier in such contexts.
Let me outline two reasons for preferring the proposal offered in this essay over that offered by Noonan.

The first has been put forward in the main body of this essay. Lewis tells us that spatio-temporal regions (worlds) have a lot to do with modality. They just are the possibilities themselves. The fictionalist, on the other hand, says that modal notions are to be analysed in terms of what is true according to a theory, thus denying the realist's conceptual thesis (stated in chapter 1). The link between the ontological thesis and the conceptual thesis has been severed. Thus, it might be hoped, the actual existence or non-existence of a plurality of worlds will not be entailed by the fictionalist's modal analysis. Hence, I suggested that we be cautious, and adopt a kind of agnosticism about possible worlds.

A fictionalist of Noonan's variety, however, is an anti-realist about possible worlds. According to Noonan's fictionalism, it is necessary that there is only one world, and that is to say that spatio-temporal regions are necessarily continuous. But not only do we have the intuition that spatio-temporal regions might (in the metaphysical sense) have been discontinuous, current physics allows space-times of many different topologies, including ones with disconnected regions. Thus, it should also be an open epistemic possibility that the actual world is a conglomerate of many 'worlds'. Noonan's theory flouts this intuition.

The second reason is that Noonan's thesis lacks the generality possessed by the modified thesis of § 3.2. To see this consider again Armstrong's variety of fictionalism. Recall that for Armstrong, any way of recombining the universals found in the actual world is a way the world might have been—a possible world. Because the
combinations themselves do not exist, though, neither do the *possibilia*. Instead, possible worlds must be thought of as different *fictions* about the way the actual world is.

The existence of certain universals, for Armstrong, entails the truth of certain modal claims about how those universals might have been recombined. Moreover, Armstrong tells us that any one of the universals might not have been instantiated. From the perspective of a world (fiction) in which an actual universal is not instantiated, it is impossible that universal be instantiated. For Armstrong, then, there are some contingent modal propositions.

The considerations above suggest that Armstrong's modal logic is **S4** without B. Armstrong, then, cannot help himself to the resources of counterpart theory (or, for that matter, anything relevantly similar). To see this, consider the following modal axiom of **S5**:

\[ \Diamond \exists x(Kx) \rightarrow \Box \Diamond \exists x(Kx) \]

The counterpart theoretic translation of this is:

\[ \exists w^*(Ww^* \& \exists x(Ixw^* \& Kx)) \rightarrow \forall w(Ww \rightarrow (\exists w^*(Ww^* \& \exists x(Ixw^* \& Kx))) \]

The antecedent implies the consequent because the consequent contains a vacuous initial quantifier. The implication is therefore trivial. Great news for Lewis. Armstrong, though, is going to have to offer an alternative translation scheme in order to plausibly assert that the implication is *not* a logical truth. What kind of translation might he offer? He might adopt the (informal) kind of translation found in premise (iv) of Rosen's argument, a translation Noonan rejects:
For all worlds \( w, at \ w \) there is a world \( w^* \ at \) which Kangaroos exist.

where the restricting modifier 'at \( w \)' is to mean something like 'in \( w \) or accessible from it'. Given that Armstrong holds that the accessibility relation is not symmetric, he can reject the characteristic modal axiom of S5. The problem with such a stipulation is that the resulting theory remains vulnerable to the ontological problem. Noonan's proposal is of no help here. The modified thesis (of chapter 3), on the other hand, provides Armstrong with the requisite solution.\(^5\)

Nevertheless, such considerations are hardly decisive against the fictionalist view defended by Noonan. There is no question that Noonan has provided the concrete fictionalist with an adequate counter to the objection put forward by Rosen (1993) and myself. The fictionalist will undoubtedly be grateful for the plethora of dodges available to her.

\(^5\)Lewis (1968) does give an alternative translation scheme for the relative modalities that, as Noonan notes, also dodges the difficulty. But the effect of this new translation scheme is merely to restrict the set of worlds accessible to the actual world. The accessibility relation is still symmetric, and therefore of no help to Armstrong.
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