Abstract:

Impossible worlds promise a great deal of philosophical analysis; the semantics of counterpossibles, counterpossible reasoning about rival theories that are necessarily true or necessarily false, and distinguishing co-intensive properties and propositions. Unfortunately, containing contradictions to only impossible worlds causes difficulty in our theorizing about these worlds. My proposal is to amend our principle of plenitude for impossible worlds in such a way that it delimits our analysis from including impossible worlds that involve true contradictions. Such a proposal does reduce the total analysis that can be done with impossible worlds; in particular, providing a semantics for counterpossibles with antecedents that are contradictory, counterpossible reasoning about views that involve true contradictions, and being able to distinguish contradictory properties and propositions. I argue that there are independent reasons for thinking that this lost analysis does not come to too large of a cost.
I. Introduction

Impossible worlds are notoriously poorly behaved. Despite high expectations in analysis, they often cause more problems than they solve. One promising route for better behaved impossible worlds would be some sort of principle that delimits either the worlds that exist, or the worlds that we focus on in analysis. This principle is analogous to the role that a principle of plenitude will play in regards to possible worlds. I will attempt to articulate a line of reasoning that will comprise a proviso to that principle.

My focus will be on impossible worlds that contain contradictions, as these worlds are responsible for the containment problem, the difficulty in containing contradictions only to the impossible worlds if worlds are understood as concrete. This problem motivates us to delimit such worlds from our analysis on the grounds that we will avoid the threat of contradictions in all possible worlds. This problem is also motivating for theorists who hold that impossible worlds are abstract, because by adding the proviso to the principle of plenitude for impossible worlds, such theorists will be able to avoid their principle from determining the kind of thing that the worlds are, which the principle should be neutral towards. I conclude by arguing that the lost analysis by avoiding worlds with contradictions does not come at too much of a cost.

II. Impossible Worlds

To begin with, it is natural to ask just what impossible worlds are. They are best understood by comparing them with possible worlds. In his book *Counterfactuals*, David Lewis discusses possible worlds as ‘ways things could have been.’

Our world could have been different in a myriad of possibilities and there is a possible world for each one of those ways. “Absolutely every way that a world could possibly be is the way some world is,” Lewis says elsewhere.

On the same token we can identify impossible worlds with a similar sort of statement. There are countless ways that the world could not have been. It could not have been the case the

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1 My thanks goes to Sam Cowling and audiences at Western Michigan University and Kent State University for helpful comments and criticisms.
2 Lewis (1973), 84.
3 Lewis (1986), 86.
that 2+2=5, that I had been a married bachelor, or that there existed a square circle. We might then corrupt Lewis's previous statement and say the following: absolutely every way that a world could not possibly be is the way that some impossible world is.

The preceding gives an intuitive description of impossible worlds; they are ways that things could not have been. But a further question is about the kind of entities that impossible worlds are. There are largely two routes to take on this question, and I will remain neutral between the two. One route is to hold that impossible worlds are abstract entities of some kind, such as propositions or states-of-affairs. The other route is to hold that impossible worlds are concrete entities, the same in kind as possible worlds are on Lewis's account. What I have to say will be relevant to both views about impossible worlds.

Now, what motivation do we have for positing impossible worlds; what theoretical work do they perform? There are three main areas of theoretical benefit, which give philosophers reason to be interested in impossible worlds. The first is in the semantic analysis of counterfactuals that have antecedents that are impossible. Ever since the work of Robert Stalnaker and David Lewis in the analysis of counterfactuals, it has been natural to understand counterfactuals in terms of possible worlds. We could put the analysis as follows:

(1) A counterfactual is (non-trivially) true iff some possible world in which both the antecedent and the consequent are true (an A C world) is more similar to the actual world than every possible world in which the antecedent is true and the consequent is false (an A ¬C world).

The similarity relation between different possible worlds is then determined by context in which the counterfactual is uttered. Put in concrete terms take the following counterfactual: if my sister did not exist, then I would be an only child. This counterfactual is only true just in case there is a possible world where my sister does not exist and I am an only child that is more similar to the actual world than every possible world in which my sister does not exist, but I am

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4 For example in Vander Laan (1997).
6 Throughout I will limit my discussion to ‘would’ counterfactuals as opposed to ‘might’ counterfactuals for simplicity.
not an only child. Plausibly, most of the contexts in which I might utter that conditional would be one in which the similarity relation between worlds would be such that it would turn out true.

There is a difficulty with this analysis, though. If we understand counterfactuals in terms of possible worlds, what are we to say of counterfactuals with impossible antecedents? After all, there would be no possible world where the antecedent obtains. Lewis assigns these special counterfactuals (called counterpossibles) to all coming out vacuously true. This, he argues, is the correct result because the sort of role in a discourse a counterpossible would play would be one intended to express an idea like ‘well, if you held that then we may as well conclude that anything at all is true.’

However, many philosophers do not find this satisfactory. It seems intuitive that there are counterpossibles that should come out false and some true counterpossibles that are not merely true vacuously. Take the following two counterpossibles:

(2) If 3 were greater than 2, then I would be a married bachelor.

(3) If 2+3=17, then I would be taller than myself.

It seems intuitive that (2) and (3) should both come out false, rather than true. Having non-vacuous counterpossibles is even theoretically useful when we are considering the implications of rival theories that are all necessarily true if true at all and impossible if false. If we want some counterpossibles to come out false as well as some to be non-vacuously true, then the natural way to understand the counterpossibles is by making use of impossible worlds. Given that the impossible antecedents will obtain in some impossible world, we will be able to have a similar kind of analysis as standard counterfactuals. David Vander Laan offers the following analysis of counterpossibles:

(4) A counterfactual is true iff some (possible or impossible) A C world is more similar to the actual world than every A nonC world.\(^8\)

\(^8\) Lewis (1973), 24.
\(^9\) Vander Laan (2004), 265.
We can understand the notion of a ‘nonC’ world as a world where C is not satisfied. We cannot make use of the mere ‘\twed ~C,’ because there will be impossible worlds where both C and ~C will be true.

The second area of analysis is closely related to the issue of counterpossibles. Daniel Nolan has pointed out that a major theoretical benefit of impossible worlds is that they can allow us to reason about what would be the case if another theory were true, in the cases of theories that are either necessarily true or necessarily false.\textsuperscript{10} This kind of reasoning is very beneficial when reasoning about logic and metaphysics, because both disciplines have a many rival theories that are all necessarily true if true at all. Nolan puts it as follows: “When we puzzle about how exactly Plato took the world to be, we should not take it that anything we please would be case were Plato correct, even if we do suspect that he could not possibly have been right.”\textsuperscript{11} In order to properly understand the disagreement between different theories, and in order to evaluate the different theories, counterpossible reasoning is needed to understand what would follow from each respective theory. In this regard, impossible worlds are a wonderful tool for thinking about how this would play out.

The final area of analysis that requires the use of impossible worlds stems out of the possible worlds analysis of properties and propositions. Possible worlds allow for a reductive analysis of properties and propositions in terms of set-theoretic constructions out of possible individuals and possible worlds. A property is simply the set of all its instances; hence, the set of being a human is the set of all human beings, both possible and actual. Propositions can be seen as special instances of properties, where the individuals are whole worlds. Thus, a proposition is the set of all the worlds in which it is true. Possible worlds are needed in order to make this analysis plausible at all, for if the analysis was restricted to only the actual world then there would only be one proposition, and there would be plenty of properties that would wind up identical that should not. For example, as things actually are, everything with a heart also has a liver, and hence on this analysis the property of having a heart would be identical with the property of having a liver.

\textsuperscript{10} Nolan, (1997). This sort of reasoning is a kind of counterpossible reasoning, though I think that it should be kept distinct from the first area of analysis. In the preceding paragraphs I was discussing the semantic analysis of counterpossibles, the sort of structure required for the logic of certain statements to work. This second area of analysis, however, pertains more to a kind of informal reasoning needed to evaluate different theories.

\textsuperscript{11} Ibid, 545.
Just as possible worlds are invoked to distinguish certain properties and propositions, impossible worlds are invoked to make further distinctions. For example, using only possible worlds, the world-analysis leaves us with only a single proposition that is necessarily true and only a single proposition that is necessarily false; the former would be the set of all worlds, and the latter would be the null set. Given the intuitive support in thinking, for example, that ‘2+2=4’ and ‘modus ponens is a valid argument form’ express distinct propositions, many philosophers find it important to distinguish these kinds of propositions. This is precisely where impossible worlds come in. Necessary propositions will no longer be the set of all worlds, because there will be many impossible worlds in which they are false, and similarly for impossible propositions. Properties can also be distinguished, for example the property of being triangular and being trilateral can now be distinguished because there will be impossible objects that are only triangular but not trilateral, as well as being only trilateral but not triangular.

III. Problems from Contradictions

Despite the promise of very powerful analysis, impossible worlds tend to create a new problem for every problem they solve. In this section I will discuss two motivations for delimiting contradictions from our analysis.

The first is the containment problem discussed by David Lewis.\textsuperscript{12} When referring to concrete possible worlds, the phrase ‘in a world’ functions as a restricting modifier similar to phrases like ‘in Australia.’ It states a location that is being referred to. However, if we bring contradictions into the picture there is a problem in containing the contradiction to one place. Consider the following: “In Australia, it is true that there are kangaroos and it is false that there are kangaroos.” Now, the contradiction is, so to speak, ‘located’ in Australia. But the problem is we cannot keep it there, for the previous statement could be easily rephrased as follows: “In Australia there are kangaroos, and it is false that in Australia there are kangaroos.” Now the contradiction is also true wherever the context of utterance is. The same can be said for impossible worlds. If I say “in impossible world W, there are kangaroos and there are not kangaroos,” then I could just as well have said “in impossible world W there are kangaroos and it is false that in impossible world W there are kangaroos.” This has the form of a straightforward

\textsuperscript{12} Lewis (1986), 7.
contradiction for if we symbolize ‘in impossible world W there are kangaroos’ as ‘P’ we can arrive at ‘P & ~P.’ There is no way to keep the true contradictions only in impossible worlds, forcing us to say that there are true contradictions in possible worlds as well. This is certainly a very heavy cost to adopting impossible worlds.

It is important to note that this particular problem does not arise for those who hold that impossible worlds are abstract entities of some kind. This is because, on the abstractionist view, the phrase ‘in a world’ does not function like a modifier that restricts what you are quantifying over, rather for the abstractionist the phrase is a modifier that tells you something is true according to a representation. The ‘according-to’ modifier does not suffer from the same containment problem because the representation does not have to represent anything that is actually the case. The ‘according-to’ locution in discussing abstract worlds is similar to the same kind of locution we might say about stories. There could be a story that contained a contradiction in it, and we might then be inclined to say that a contradiction is true according to the story. But, we are not thereby committed to a contradiction being true in our context of utterance. The story simply does not represent something true. The same can be said for abstract impossible worlds. They simply do not accurately represent what is the case; indeed even most possible worlds do not do so either. For example, on Robert Adams’s theory of possible worlds, one way the actual world is distinguished from the other possible worlds is in virtue of the fact that every proposition that comprises the actual world is true, whereas every other possible world has some false propositions. Therefore, this issue is only a problem for those who hold that impossible worlds are concrete, and not one for those who hold that they are abstract objects of some kind.

The second issue is related to the semantical analysis of counterpossibles. This final problem has less to do with difficulties caused by contradictions, but more to do with the contradictions tempting us to have little need for analysis in this regard in the first place. It is natural to think that a counterfactual should be true in case the antecedent logically implies the consequent, and a contradiction implies anything at all. It is tempting to embrace the idea is

13 Adams (1974), 221-222.
14 Lewis (1973), 24.
that counterfactuals with antecedent that is a contradiction, simply should come out as vacuously true, and hence no need for a serious metaphysics underlying it.\textsuperscript{15}

This issue is quite different from the other problem associated with contradictions. The previous problem give us positive reason for not wanting contradictions in our ontology, but this simply gives us less reason to posit contradictions in the first place. If it is the case that we do not need an ontology that contains contradictions in order for the counterpossible semantics to work out, then that is just less reason for positing the contradictions in the first place. This issue is one of reducing the overall value of impossible worlds that contain contradictions at all; they afford less overall benefit.

IV. Taming Impossible Worlds

The previous section seems to give us the proper motivation to do something about the contradictions in the impossible worlds. My proposal is to amend our principle of plenitude regarding impossible worlds in the same way that Lewis amends his own principle of plenitude for possible worlds in \textit{On the Plurality of Worlds}. A principle of plenitude is intended to give us some kind of insight into the variety of worlds, be they possible or impossible. Lewis settles on his famous principle of recombination, which he never states formally, but the rough idea being that it is possible that any number and combination of duplicates of any number of things can coexist and also possible that they exist independently from one another.\textsuperscript{16} Lewis then adds a proviso to his principle: “size and shape permitting.”\textsuperscript{17} The purpose of the proviso is twofold. The first is simply to ensure that the principle does not commit one to possibilities that it was not intended to address in the first place. The problem is that without the proviso the principle commits one to holding that it is possible that the size of spacetime be larger than a continuum; this is a problem because the principle was originally only supposed to give us insight into the possible ways that spacetime could be occupied, not about how big spacetime itself could be.

\begin{itemize}
  \item \textsuperscript{15} What I have in mind here is the treating of the vacuous counterfactuals with some sort of technical device, rather than a robust metaphysics of impossible worlds containing contradictions. The issue of whether or not counterfactuals with contradictions actually should come out as vacuously true will be discussed further at the end of this paper.
  \item \textsuperscript{16} Lewis (1986), 86-89.
  \item \textsuperscript{17} Ibid, 89.
\end{itemize}
The second motivation for the proviso is that it wards off problems that the principle would otherwise create. Using an unqualified principle of recombination we can generate a paradox out of the plurality of worlds.\textsuperscript{18} If any duplicate of any individual can coexist with any other, suppose that we take a duplicate of every possible world and look at the possible world in which all the duplicates coexist. But this big world must also contain itself as a duplicate. This gets us into trouble, however, for if we measure the cardinality of the electrons in the big world and assume that cardinality is $K$, then there will be $2^K-1$ subsets of the electrons. But, then each subset of electrons is a world, so there should be at least $2^K-1$ electrons in the big world. And this is where the trouble lies. However, the big world is, it will always be bigger than itself. Lewis holds that the threat of this disaster gives further reason for his proviso.

Similarly, I wish to call for a proviso on our principle of plenitude for impossible worlds. Nolan offers the following as the principle of plenitude: “for every proposition that cannot be true, there is an impossible world where that proposition is true.”\textsuperscript{19} This principle certainly seems powerful enough, though it seems to me that restricting the proposition to only those that cannot be true seems unnecessary; the principle can simply govern over all propositions and be equally as powerful. Thus, for a more elegant principle I propose:

\begin{equation}
\text{(5) For any proposition } p, \text{ } p \text{ is true in some impossible world.}\textsuperscript{20}
\end{equation}

Now, the purpose of the proviso I am discussing would restrict the impossible worlds from containing any contradictions. Thus, I propose ‘the law of non-contradictions permitting.’ Therefore we end up with the following principle:

\begin{equation}
\text{(6) For any proposition } p, \text{ } p \text{ is true in some impossible world, the law of non-contradiction permitting.}
\end{equation}

\textsuperscript{18} Ibid, 102-103.
\textsuperscript{19} Nolan (1997), 542.
\textsuperscript{20} Both Nolan’s principle and my own rule out there being an impossible world in which nothing is true at all, including the proposition \textit{nothing is true}. If accounting for such a world is deemed desirable then this could be accounted for by modifying (5) to the following: ‘for any proposition $p$, $p$ is true in some impossible world and $p$ fails to be true in some impossible world.’
The proviso in (6) is intended to bear a similarity with Lewis's proviso.\footnote{One immediate objection that might be raised against my proposal is the following: a principle of plenitude for possibility is intended to give us some sort of insight into what is in fact possible, but my principle of plenitude rules does not give us that same insight, for surely contradictions are impossible yet (6) does not count them as impossible. My response to this worry is that the principle is intended to inform us about what impossibilities there are in impossible worlds, not about what impossibilities there are \textit{simpliciter}. We need not account for every impossibility in our impossible worlds, because the purpose of impossible worlds is not to offer a reductive account of impossibility in the same way that Lewis offers a reductive account of possibility with his possible worlds.} If one thinks that impossible worlds are concrete, then the motivation for the proviso will be similar to Lewis's second motivation, that of avoiding disaster. The concretist will be able to avoid there being true contradictions in all worlds. If one thinks that impossible worlds are abstract, then the motivation will parallel Lewis's first motivation, that of preventing the principle from speaking about issues that it was originally intended to be neutral towards. By adopting the proviso the abstractionist will be able to keep the principle of plenitude neutral in respect to the kind of thing that impossible worlds are. The principle is intended to govern the kind of impossibilities that show up in impossible worlds, not about what kinds of things the impossible worlds are.

Without the proviso and in light of the containment problem, the principle will naturally give credence to the abstract view of impossible worlds, yet this is not an issue that the principle is originally intended to speak in the first place.

The impact that (6) will have depends on what kind of view one has about impossible worlds. If one holds that impossible worlds are abstract objects, then the purpose of the principle will be to delimit the worlds that are focused on in our inquiry. There will likely still be the ‘worlds’ that contain contradictions, but my proposal is intended to avoid such worlds in our analyses. It would make no sense to declare that there are no such worlds, for the entities that comprise the worlds with contradictions still exist.\footnote{To put this explicitly, suppose that worlds (possible and impossible) are sets of propositions. Any set of propositions that is such that it is impossible for all of the propositions to be true together would then intuitively constitute an impossible world. Obviously, some of these sets would include contradictions. Perhaps, we may be inclined to not call such sets impossible worlds, though that would be a mere verbal point.} My proposal would ensure that only the impossible worlds that do not contain any explicit contradictions in our analysis.\footnote{David Vander Laan expresses skepticism about our being able to tell when a proposition is contradictory in Vander Laan(1997). The idea is that sentences are contradictory because of their form, but propositions can be expressed in many sentences in many different forms. It seems to me that this too strong, however. If propositions are supposed to have to do with the meaning of the sentences, then why not think that the form is part of that meaning? In order for a sentence to be contradictory all that is really needed are the logical constants, so why not think that the logical constants are also involved in the proposition in the same way?}

If, on the other hand, one held that impossible worlds are concrete objects, then my principle is intended to ensure that any impossible worlds that contain contradictions do not exist.
at all. A major reason for why such worlds cannot exist is because of the containment problem of contradictions. If there is a true contradiction in one world, then there will be a true contradiction in all worlds. It is also more natural to deny the existence of these worlds, contra many theories of abstract worlds, because the concrete worlds are not ‘built’ up out of other constituents. The concrete worlds exist independently from one another, in a way that the structured abstract worlds are not.\textsuperscript{24}

We need to get clear on what this picture of worlds looks like. One question that could be raised is the following: if there are no contradictions in any of these so-called ‘impossible worlds,’ then in what sense are they impossible? The answer to this question lay in the distinction between logical possibility and metaphysical possibility. Briefly put, logical possibility can be understood in merely formal terms. No true propositions of the form ‘p and not-p’ and no true propositions that imply anything of that form. Metaphysical possibility, on the other hand, is much more restrictive. This notion is best captured by the slogan ‘truth in a possible world.’\textsuperscript{25} Aside from contradictions, other claims that are generally considered metaphysically impossible are the denials of the truths of mathematics and some of the truths of metaphysics. We can then understand the impossible worlds that I am talking about as consisting in the region of logical space that is not metaphysically possible, yet still logically possible.

We can still run all of the analyses that we would wish, barring the ones that directly involve contradictions. For example, tri-angularity and tri-laterality can be distinguished by taking advantage of worlds with truth value gaps. There may be an object that is tri-angular, but it is indeterminate whether the object is tri-lateral or not.\textsuperscript{26}

\textsuperscript{24} Some views of abstract impossible worlds will not hold that the worlds are structured out of other abstract entities, but rather are ‘simple’ in some sense. Depending on the specific view in mind, the theorist could take my principle in either of the two ways; either deny that impossible worlds with contradictions exist, or just eliminate them from the analyses.

\textsuperscript{25} Though we should not define metaphysical possibility as truth in a possible world. If we accepted this definition, then it will be difficult the understand the difference between possible and impossible worlds. What sense can we make of worlds that are not metaphysically possible, when we understand metaphysical possibility as truth in possible worlds? I will follow most possible and impossible worlds theorists and take the notion of metaphysical possibility as primitive, with Lewis (1986) being an important exception. Thanks to Kent Baldner for pointing this out to me.

\textsuperscript{26} It may be that all of the impossible worlds contain truth value gaps. If so, then some interesting results arise. First, we would be able to distinguish the possible from the impossible worlds, in virtue of the worlds that contain truth value gaps and those that do not. Second, we would be able to present a more informative principle of plenitude, that would look something like the following: For any set $S$ of propositions, the members of $S$ comprise
V. Benefits

What, then, are the benefits of the current proposal? The initial benefit to see is that by delimiting impossible worlds in the fashion that I have described we can avoid the containment problem. Avoiding the containment problem is, I think, a benefit even for one who is inclined to think that impossible worlds are abstract objects, because even though abstract worlds will avoid the problem, it is better that our principle of plenitude for impossible worlds be neutral to the metaphysics of those worlds. It would strike me as a cost if a principle of plenitude for possible worlds failed to be neutral between different metaphysics of those worlds, particularly because the principle is intended to give us insight into what possibilities there are, while the metaphysics of the worlds is intended to give us insight into what possibilities are. Just the same can be said, I think, for our principle of plenitude for impossible worlds. The principle gives us a different sort of insight than the metaphysics of the world, so it would be better, other things being equal, for the principle to be neutral in respect to the metaphysics.

Another major benefit of the present view is that affords greater in our theorizing about impossible worlds. It affords greater elegance by allowing for more natural principles regarding impossible worlds. One example of this comes from David Vander Laan. Consider Vander Laan's proposed analysis for counterpossible, (4). Here, Vander Laan must make use of a notion of a 'nonC' world rather than merely a '~C' world, because on his view there are impossible worlds in which both C and ~C are true. This notion of a 'nonC' world is somewhat obscure given that it is supposed to differ from merely a world where ~C is true. It cannot mean simply a world in which C is false, because that is simply the same as a world where ~C is true. It presumably means a world which does not satisfy C. But normally, one would think, it would be enough for a world to not satisfy C, just in case ~C is true in that world. This is surely not what Vander Laan has in mind. The difficulty in articulating just what is meant by a 'nonC' world, gives us some reason to avoid using such a notion, and on my proposal we can. We can simply all of the truths of some impossible world provided: (a) S is consistent, and (b) S is not fully determinate. Credit to Sam Cowling for this point.

For more on the distinction between what possibilities there are and what possibilities are see Efird and Stoneham (2008).
make our analysis of counterpossibles use the notion of a ‘¬C’ world instead.

VI. Lost Analysis?

The final topic to consider is the analysis that is lost on the current proposal; I will argue that the lost analysis does not amount to much of a cost. There are three areas in which we lose analysis. First, all counterpossibles with contradictory antecedents come out vacuously true. This is the correct result, I think. When discussing counterpossibles with contradictory antecedents is when I think that the Lewisian position is the most intuitive. On this matter Lewis states the following: “it seems that a counterfactual in which the antecedent logically implies the consequent ought always to be true; and one sort of impossible antecedent, a self-contradictory one, logically implies any consequent.”\(^{28}\) Given that anything follows from a contradiction, it seems intuitive that we should get this result. Assuming, then, that this is the correct result then that greatly reduces our need for any impossible worlds that contain contradictions.

Another important facet of this discussion is the notion of entertainability. In a given context some propositions are unentertainable; that is, they are assumed to be false. When those propositions are unentertainable any counterfactual that contains them as an antecedent comes out false. Lewis thought that impossible propositions are always unentertainable, but this claim is not thought to be particularly plausible. After all, there are many propositions that are necessarily true or false, but we do not know which. Suppose, for example, that the Goldbach's conjecture is true, but we do not know that it is true. Without this knowledge, how could the denial of Goldbach's conjecture be unentertainable in a given context?

Lewis's original view that impossible propositions are always unentertainable is, I think, vastly more plausible when considering self-contradictory propositions. This is, of course, going to turn on how plausible one finds views such as dialetheism that involve there being true contradictions. But, for those who do not such views plausible at all, it would make sense that one would find contradictory statements as always unentertainable.

As for the second area of lost analysis, again, this turns of whether one holds some core Lewisian intuitions on these matters. Lewis was not worried by there being necessarily co-extensive properties, such as tri-angularity and tri-laterality, generally seeing properties and

\(^{28}\) Lewis (1973), 24.
propositions as performing a kind of functional role and the use he had for these entities did not require individuating in this way.\(^{29}\) Many philosophers do not find this plausible, and find a need for a more fine-grained individuation than the possible worlds analysis offers; this is, as we have see, a major motivation for using impossible worlds and objects. My contention is that Lewis’s position is much more plausible when we focus on self-contradictory propositions. It is more plausible that, for example, all self-contradictory propositions really are just one proposition given that contradictions can owe their truth values entirely to their form; that is, the logical constants in a contradiction are enough to ensure that the proposition is false. Aside from this issue, while we may have clear theoretical need for individuating necessarily co-extensive properties, there is a much less robust need to individuate contradictions from one another. I also assume that this sort of Lewisian intuition about properties and propositions would be fairly innocuous to one who is already favorably inclined towards a world-analysis of propositions and properties to begin with.

The final instance of lost analysis I regard as the strongest cost of my proposal. It does seem to come at a cost that we lose counterpossible reasoning about any view that requires that there be a true contradiction, such as dialetheism. Now, my response to this depends in part on the strength of my discussion of the other two lost analyses. If it is natural, per ‘Lewisian intuitions,’ to suppose that contradictions are unentertainable, or that all contradictions express a single proposition, then it seems it will be natural that we would not be able to properly apply counterpossible reasoning regarding such views as dialetheism. No doubt this comes at some sort of cost, and what I have to say is far from conclusive, though I hope that the benefits of my proposal outweigh the costs.

**VII. Conclusion**

In conclusion, impossible worlds promise a great deal of theoretical analysis. Yet, the very nature of impossibility makes impossible worlds difficult to properly utilize in analysis. I have proposed adding a proviso to our principle of plenitude of impossible worlds that ensure that impossible worlds do not contain contradictions. This allows us to avoid the problem of

\(^{29}\) Lewis (1986), 54-56. See also Stalnaker (1987), where he argues that a possible worlds analysis of propositions is fine-grained enough for the work that he puts propositions to.
containment. Such a proviso forces us to conclude that all counterpossibles with contradictory antecedents are vacuously true and that all contradictory propositions and properties are identical on a world-reduction of such entities. I have argued that one with the relevant ‘Lewisian intuitions’ will find this plausible. The proviso also causes difficulty in reasoning about views that involve true contradictions such as dialetheism. This counts as something of a cost towards my proposal and will have to be weighed against the benefits.
Bibliography


