

# POSSIBILITY VERSUS POSSIBLE WORLDS

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ABSTRACT: It is a common idea in philosophy that some false propositions such as (C) that Charlottesville is the largest city in Virginia, have the property of being possibly true. It is not a clear idea but an important one which has inspired considerable effort at clarification. One suggestion is that there exist (really, not just possibly) “possible worlds” in which C or some suitable facsimile is true. One further attempt at clarification on offer is that there exists (again, really) a maximal consistent set of propositions containing C. It is argued here that these attempts at clarification are profoundly erroneous. There exist actual powers of imaginative construction which would yield a scenario sufficiently detailed to be recognized by competent reviewers as one in which C is true. (The depiction might be in film or narrative and would avoid analytic falsehoods.) This is a frail clarification, vulnerable to questions, but is the best possible direction for a clear idea of the possibility of the proposition. The notion of possible worlds is associated with very valuable work in mathematical logic. It can only improve our appreciation of this excellent work to separate it from cloudy metaphysics.

KEYWORDS: possible, maximal consistent, proposition

1. It can be difficult to explain to students that the proposition (C): that Charlottesville is the largest city in Virginia, is contingent, neither necessarily true nor necessarily false. They will agree that it could turn out that Charlottesville is the largest, meaning that it could become the largest, in a variety of possible ways. This brings out a primary problem – about the proposition itself, before explaining its possibility or contingency. By C, I mean the proposition that Charlottesville is now the largest city in Virginia, a proposition we know is false. It is strictly impossible that this, or any other proposition, should become true. No proposition ever changes in truth value.

Unfortunately, this is not accepted by all parties to this discussion. It is common to say that the proposition that I am sitting is true at some times and false at others. When I stand up, the proposition becomes false. Is it that, when I said I was sitting, I was right, but now I am wrong? Propositions should be understood as clear about time references important to truth. If I say truly the sentence “I am sitting,” the sentence is poorly described as “what I said,” “the thing I asserted,” because the sentence (in reference to me) will soon be false and that does not affect what I said. With such propositions as that  $2+2=4$ , time reference is not important.

James Cargile

It often is important. Any proposition, if true, is true at all times, if false, false at all times. Its truth value may not be settled until later, but that does not mean that it will not have one until then.

The proposition C would have been difficult for an ancient Greek to grasp. Abstruse propositions of modern science would be even more difficult. Understanding might require lengthy explanation, of the sort given to modern students in the course of their education. To identify the time referred to in C would have been difficult in ancient Greece. The lengthy explanation would not be part of the content of the proposition, just part of the requirement for grasping it.

The possibility or even the nonzero probability of the sentence used to express C coming to express a true proposition is not what is meant in my saying that the proposition C is possible. C is about the position of Charlottesville in the present ranking. Some philosophical skeptics will agree that it could at present be the largest, appealing to a metaphysical skepticism that has us somehow out of touch with reality. This would be explaining the possibility of C in terms of another possibility – our being radically deceived about C. That is a logical possibility, the possibility of the proposition that we are at present mistaken in believing that C is false. Citing that possibility does not offer any progress on the project of explaining what it means to say that C is possible. In fact, it would be a regression. Unfortunately “It is possible that P” is commonly used in this way, to claim that P may be true, unbeknownst to us.

The right approach is that there actually exist imaginative exercises which qualify as imagining that C is true. We would want to avoid the natural “It is possible to imagine that C,” if we aim for a noncircular explanation. You can assure someone that they can imagine it in the sense that they can do twenty push-ups. Even if presently not successful, it is a lawlike truth that someone with their makeup will succeed with determined effort over a short period of time. This use of “imagine” could be quite literal for such a possibility as my turning bright red. You would simply call up an image of me, colored bright red. True, there are philosophical objectors to the existence of mental images, but the project will make sense to most people, without any actual visual images. Visualizing does not require having visual images, though images may help and reinforce confidence about imagining. “Imagining” C is very different. Actual visual images do not seem helpful. But in a looser use of “imagine,” the most common use, many of us have the ability to tell a story in which C is true. We actually possess a working method of storytelling which will produce a story people will recognize as one in which Charlottesville is presently largest.

It is fair, and an understatement, to complain that this general explanation of possibility is unclear. Possibility in general is unclear. Clarity for the possibility that P increases about particular cases the more naturally everyone recognizes a story as one which successfully depicts P as true. “Here’s a story: C is true” is a poor showing. “Once upon a time, lots of bachelors were married” is another bad attempt on a different proposition. The C story could be improved by suitable imaginary details. Suitability is somewhat vague and subjective, and being stuck with “It is possible to provide suitable details” is circular. With the bachelor story, rich details could be provided so that many would describe the result as a story in which bachelors are married. That does not establish the possibility of married bachelors. It is not a successful depiction. How can we prove such a depiction cannot be successful? We can deduce a contradiction from the premise that X is a married bachelor.

Deduction in some formal systems, such as standard propositional or predicate calculus, is defined with mathematical precision. We must not let this foster illusions about the precision of the general idea of deduction in natural language. Some philosophers hold that there are contradictions which are true. If “A proves P to B” entails that B accepts P, then we may not be able to prove the impossibility of married bachelors to everyone.

Whether a story “to the effect that P” establishes P as possible is vague and subjective. To argue the impossibility of P by trying to come up with an acceptable story and failing is even weaker. It is important to recognize the weaknesses of the popular conception of necessity, possibility and contingency. That does not mean there are no such properties. Even eminent thinkers may be unable to reach agreement about the possibility of certain propositions. Their imaginative powers and logical skills may not be adequate for the particular task. They are still adequate for many cases and provide reason to believe that our imaginative power, along with deductive skill, shows us the presence of a feature, possibility, possessed by some propositions and lacked by others, even though these powers vary widely among people and are fallible for everyone.

The possibility of the proposition that I am standing right now can easily be proved by imagining. Imagining that C is more difficult. Imagining that the Earth is round has given many people trouble. Such variability about whether a certain fabric sample is red, is good reason to suspect that “red” does not generally express any objective property. Some say the same thing about goodness. That is spiritually bad. Possibility is not as important as goodness, but it is objective in spite of similar difficulties.

For any true proposition, we can establish possibility without depending on imagination, by verifying it. That proves that it is possible. Nothing impossible is true. We could sail around the Earth and prove its roundness without being able to visualize the whole Earth, or needing to. For the possibility of false propositions, imagination is crucial. This is bad news for verifying possibility claims, because imagination is so variable. For false P, telling a story which qualifies as successful imagining that P is a frail criterion for possibility. We should recognize that it is the best we have.

2. Successful story telling might be said to describe a “world” in which C is true. This could be a harmless figure of speech. However, there are those who hold that saying that there is a possible world in which P is true makes explicit something important. One leading authority writes as follows: “It is uncontroversially true that... things could have been different in countless ways... I therefore believe in the existence of entities that might be called ‘ways things might have been.’ I prefer to call them ‘possible worlds’.”<sup>1</sup>

It is not disputed here that things might have been different in countless ways, one way being C’s being true. But C’s being true, though a way things might have been, is not a possible world in the meaning of the above author. This is not based on a position as to what “possible world” must mean, but rather, on the assumption that the author would not consider C’s being true a possible world. Insofar as C is a way things might have been but not a possible world, being a way things might have been is not sufficient for being a possible world.

We should all agree that, in order for things to be otherwise as with C, lots of other things would also have to have been otherwise. C being true would require a change in the truth value of indefinitely many propositions. The size of Charlottesville could stay the same and other cities be smaller, or other cities stay the same and Charlottesville be larger, etc. It should be clear how to arrive at very many ways (subways) for C to be true. And it should be clear that none of those ways are possible worlds. For each one of those ways C might have been true might itself be true in very many ways, varying names of inhabitants and adding details, etc.

3. A main attempt to make the idea of a possible world palatable is based on appeal to the idea of a maximal consistent set of propositions, where a set of propositions is maximal consistent if it is consistent (no contradiction can be derived from premises drawn from the set) and is such that adding to the set any proposition

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<sup>1</sup> David Lewis *Counterfactuals* (Cambridge: Harvard University Press, 1973), 84.

which is not a member results in a set which is inconsistent. The contingency of C would then be explained in terms of there being maximal consistent sets of propositions containing C and also such sets containing not-C. One purpose here is to argue that this position is unsound.

In the lower predicate calculus (LPC) there are two main meanings for saying that a set of sentences is consistent. One (syntactic) is that there does not exist a proof using premises from the set, of a formal contradiction, say  $P \& \sim P$ . This existence, though actual, would be highly idealized, not restricted to physical proof lists on paper. The other (semantic) is that there does exist an interpretation which makes every sentence in the set true. These can be proved to be coextensive. To say that a maximal consistent set of interpreted LPC sentences represents a “possible world” could only be a stipulative introduction of a technical term. Such a set of sentences is not essentially connected with any interpretation. So it is not a story of any “world.” However, a set of LPC sentences does constrain interpretations in a way which could be called “describing a world structure.” Thus, even if the terminology is not helpful, it is a reasonably clear way of speaking.

For a given consistent LPC sentence S, a maximal consistent extension of S is determined, albeit non-constructively, by an enumeration (the enumerations are constructive) of all LPC sentences. Then a series runs through the enumeration and includes or excludes a sentence depending on whether or not it is formally consistent with the set so far formed. There will be infinitely many different maximal consistent extensions for S, depending on which of infinitely many enumerations of the other sentences is chosen. We can call the idea that a proposition (such as C) is possible iff it has a good translation into LPC which has a maximal consistent extension, “LPC possibility.”

We concede (solely) for purpose of discussion that this is a sensible way of speaking of something, which could be called “possible worlds.” It could be a non-circular way of defining “possible world” in terms of syntactic consistency, and such consistency can be proven to be equivalent (in LPC) to semantic consistency. However, such a “possible world” would not be any specific interpretation and would not represent anything plausibly called a “story.” “Once upon a time, Fa...” is a fair caricature.

It is large understatement to say this LPC possibility is no better as an account of the possibility of C than the vague “imaginative exercise” account. Translating C into LPC is a vague project, starting with a sentence letter translation (say ‘C’ as an SC sentence). Translation into a formal system is a way of bringing out logical connections relative to the system. There are different translations and different formal systems. The idea of bringing out “all” connections is implausible.

James Cargile

I concede, again for purpose of argument, that there is a set of all propositions  $P$  such that  $C$  strictly implies  $P$ . Our access to that set is just as feeble as our imagination for testing the possibility of  $C$ .

The inadequacy of LPC possibility is underscored by what is often counted as a virtue of LPC – its compactness. If every finite subset of a set of LPC sentences is consistent (syntactically or semantically) then the set is consistent. This compactness is not a feature of sets of propositions. The infinite set (S-minus) : {1. There is at least 1 F, 2. There are at least 2 Fs,...,n. There are at least n Fs,...} is consistent for some appropriate choice of being F, such as being a rabbit. The set S: {S-minus, + 0. There are only finitely many Fs} is inconsistent (called “omega-inconsistent”) even though every finite subset is consistent. That LPC does not allow this to happen is not a virtue as far as representing the possibility of propositions is the project. If an LPC possible set can include S, that is too bad for LPC possibility. It is better to say LPC cannot represent such a set, but that is too bad for LPC representation of possibility.

Second Order Logic (SOL) is not compact, but this is not improvement. It just counts as syntactically consistent some sets which do not have models, which is no virtue. The right verdict is that a set with no model is not “really consistent.” This is an important notion which is not well captured by formal systems. This counts against trying to define possibility in terms of a maximal consistent set of propositions. For the consistency cannot be adequately based on the nonexistence of a formal deduction of a contradiction. A formal deduction can only use a finite number of premises. The absence of a formal deduction of contradiction is thus no guarantee of genuine consistency for sets of propositions. We would have to rely instead on the semantic idea of it being possible for all the propositions in the set to be true. That is obviously circular as an account of possibility.

4. This by itself is not sufficient to refute the view that there are a vast number of “possible worlds.”  $C$ , as a way things might have been, might itself have been the case in many ways, and each of these many ways might have been the case in further ways. This might seem to lead to an infinite branching series with some hope for a possible world as a path through the lattice. Someone might even call such a path a “way” in another sense. The path, or world, or maximal consistent set of propositions, would presuppose the idea of possibility but would work out the idea that  $C$  being true would require infinite changes as to the totality of truths. Infinitely many infinite sets of such changes would then be the infinity of distinct “possible worlds” in which it is the case that  $C$ . This ontological view might be

advocated even after the hope of noncircular analysis is surrendered. Whether members of this set are really “worlds” would be an idle matter of terminology.

I will not attempt to refute the idea that C, as a way things might have been, heads a lattice of ways such that a path through the lattice could be called a “complete way” or “possible world” in which C is true. My complaint is just that, even so, saying truly that there are such things is not only no account of possibility – it would merely reflect a fact about possibility.

5. For all its inadequacy, the LPC notion of a maximal consistent set of sentences may have influenced the idea of a possible world as a maximal consistent set of propositions. Consider the set of propositions. As a totality, it has its detractors, who see it involved in paradoxes and deny the existence of such a set. Here we will set those objections aside. The paradoxes about the set of all propositions are answerable. There really is such a set. We will not burden our present argument with establishing that point. Rather, we observe that, if the set of propositions were really an inconsistent idea (the set itself is of course, highly inconsistent, but that is another matter) then so is the idea of the set of all true propositions. If there is no set of all propositions then there is no set of all true propositions. (The primary trouble for the all-set are self reference and excessive size. Those same troubles arise for the true-set.) And if there is no set of all true propositions then it is not reasonable to hold that there are nonetheless many distinct maximal consistent sets of propositions. We are assuming the existence of a set of all (and only) true propositions.

The set T of true propositions is a subset of the set of propositions, separated by the property of being true. This is a paradigm of a maximal consistent set of propositions. There are other large size sets of propositions, such as the set of false propositions or the set of propositions which are consistent with C, but those are not consistent. There is the set of necessarily true propositions, but it is a proper subset of T even if it is of the same cardinality. But, granting T, why not lots of other maximal consistent sets? The answer depends on a point which is, unfortunately, not unanimously accepted: any set is nothing but the extension of one or more properties. For a set to exist is for there to exist a property of which that set is the extension. Russell’s Paradox has inspired the idea that some properties, such as the property of being a non-self-membered set, do not determine sets, on pain of contradiction. I agree with Bertrand Russell---there is no such property.

T is the extension of the property of being a true proposition. What property could determine a distinct maximal consistent set containing C? For any

contingently true proposition  $P$ , the property  $P_v$ , of being either a true proposition or the proposition  $P$ , determines the set  $T$  of all true propositions.  $P_v$  is a distinct property from the property of being true. It is possible for a proposition to have the property  $P_v$  without having the property of being true, since  $P$  has that property whether or not it is true. Thus there are infinitely many properties distinct from being true that will separate a maximal consistent set from the set of all propositions.

However, all of these trivially distinct properties determine the same set:  $T$ . There does not exist any property which will separate, from the set of propositions, any maximal consistent set containing  $C$ . There is only one maximal consistent set:  $T$ , and thus (if we must use the expression) only one possible world. There are nonetheless countless alternative possibilities. For every contingent truth, its negation represents a way things might have been. And “possible world” could still be used here, just in a properly loose way, according to which novels and plays may depict possible worlds. These will not be the infinitely detailed “possible worlds” of the modal metaphysicians.

The clear notion of a maximal consistent set of LPC sentences may have encouraged the idea of a maximal consistent set of propositions. The former is based on the clear construction of an enumeration of LPC sentences. This enumeration can be run through, not constructively, but plausibly, from the standpoint of classical logic, adding at each step in the enumeration if and only if doing so is consistent with what is formed so far. This is not possible for the set of propositions, since it is not denumerable, having a cardinality as great as the Continuum. However, if we accept Zermelo’s Well Ordering Axiom, we might think of proceeding through this set on a transfinite selection of a maximal consistent extension of  $C$ , to obtain a maximal consistent set containing  $C$ , to be called a possible world in which  $C$  is true.

Zermelo’s Well Ordering Axiom, and its equivalent, the Axiom of Choice, are propositions there is good reason to reject. And the background assumptions of Zermelo’s Axiom include the presumption that there are no sets as big as the set of propositions. That set is a good candidate for a counterexample to the axiom – a set that cannot be well-ordered. However, this will not be argued here. Those who choose to believe there are such well-orderings can go on to believe in transfinite runs through to separate a maximal consistent subset other than  $T$ . We should add possible worlds metaphysics to the Banach-Tarski Paradox as just another wondrous result of these axioms. We should note at least that these run-throughs are not based on consistency defined as the nonexistence of a formal deduction of contradiction. They would appeal to the unanalysed idea of possible truth. This



appeal to well-ordering is no improvement on our idea of possibility as revealed to imaginative survey. Imagination is indeed a highly fallible guide, especially for some imaginers. It is an illusion to think these questionable postulates constitute any improvement.

6. In debates about whether the alethic modalities iterate, a relation, assumed to be reflexive, “accessibility” between possible worlds is introduced. “Possible” then becomes “true in some accessible possible world” and “necessary” is “true in all accessible possible worlds.” The question whether what is necessarily true is necessarily necessarily true ( $Np \rightarrow NNp$ ) then turns on the question whether the accessibility relation is transitive. The question whether what is possible is necessarily possible ( $Lp \rightarrow NLp$ ) turns on the further question whether accessibility is symmetric. This is a very clever and creative way of recasting the questions about iterated modalities. As a tool for constructing meta-theoretical results about formal systems of modal logic it is unimpeachable. Various relations of accessibility could be constructed, one modeling one set of axioms, another modeling some other.

However, this modeling of different axioms would have little to do with whether one system represented the truth of the matter. The constructed “worlds” with their relations of accessibility could be adequately represented by sets of numbers. The question as to which axioms represent the facts of modality would depend entirely on the separate question what those facts are. On the other hand, if possibility really consisted in the existence of “worlds” in some more substantial sense, that were really accessible, then the question about iterated modality would be a question about these entities and their relations. It might then be tempting to think that the objective existence of possible worlds is required for the objectivity of the questions about iteration. This does not follow from the fact that the objective existence of possible worlds and an accessibility relation would make the questions objective. But the hope for objectivity about questions of iteration does create a pressure in favor of objective existence for possible worlds.

The pressure is even greater in the case of analyses of subjunctive conditionals in terms of possible worlds. Consider the sentence (S) “If it were the case that Virginia Beach is not (at present) the largest city in Virginia, then it would be the case that Norfolk is the largest.” It is common to pretend that a sentence such as the antecedent of S expresses a proposition, which could be named ‘not-V’ and that the consequent also expresses a proposition (N). Many philosophers would want to conclude that then S expresses a definite proposition and would enquire as to whether it is true, false, or neither. This is quite

implausible. We will grant for purpose of discussion that the antecedent and consequent sentences do indeed, to parties to this discussion, express definite propositions. Various truth functional relations between these propositions can be claimed without need for further explanation. Thus  $\sim V$  materially implies N, and conversely, their disjunction is false, etc. But the frame of S, though it is grammatically just as regular as the grammatical forms for truth functional connections, (in fact, is even more natural in English than they are), nonetheless does not represent any relation between  $\sim V$  and N.

It can represent various relations if it is supplemented with sufficient further explanation. Thus someone might say that they assert S because, if we hold all the facts about the size of Virginia cities other than Virginia Beach constant, and add to a precise statement of those facts, the premise  $\sim V$ , then N can be straightforwardly deduced. This could be formulated precisely so as to yield a rather trivial truth. That  $\sim V$ , accompanied by this other material, entails N, is a relation between  $\sim V$  and N which can be asserted to hold. That proposition is not expressed by S in the way that the antecedent and consequent express propositions.

Another person might assert "Not-V would not have implied N" on the grounds that Virginia Beach was almost not the largest city in Virginia because an industry was started in Fairfax which was very likely to succeed and would have attracted half the population of Virginia Beach, etc. The line would be that the best explanation for  $\sim V$  would be the success of that venture and the result that Fairfax, not Virginia Beach, was largest. The contribution of the frame is not the expression of one standard relation.

This verdict will be unsatisfactory to many philosophers because they will feel that the two claimants just described would be in disagreement. The denier might say that the trivial deduction, though valid, is an objectively wrong way to interpret S. Here possible worlds have seemed to have promise. The idea is that for propositions A and C, "If A were the case then C would be the case" means, roughly, that with respect to the class of possible worlds in which A is true there is at least one in which C is true, which is "closer" to the actual world than is any world in which C is false. There can be considerable further discussion aimed at clarifying this relation of closeness. Here again we see the hope of objectivity.

The truth is that S does not objectively express a proposition at the level where its antecedent and consequent do. We have to go beyond that. The S affirmer above provides supplementary assumptions allowing a deduction of the consequent. The S denier asserts an incompatible counterfactual, not explicitly listing the needed premises. The denier claims there are laws of social science which, along with assumptions about probable developments and the assumption

that not-V, entail F. These are not the only ways of supplementing, but supplementation is needed. The “closest world” analysis does not duly recognize this.

Of course, the objectivity view about S does not depend on the possible worlds analysis. There could be an account according to which asserting S is claiming that there exists support of the “right kind” such that added to the antecedent it entails the consequent. A possible worlds analyst of subjunction can reject the view that there is in general a right kind of support and can appeal to the idea that support has to be a finite set of propositions to add to the antecedent, while the “really right kind” of support would require a specification of details that would go on *ad indefinitum*. The objective truth would be determined by the metaphysical closeness relation between possible worlds. Thus it will seem that, just as reference to the real world is required to give our claims about what did cause what the hope of objective truth, reference to possible worlds is needed to give such objectivity to our claims about what would have caused what. This value of a possible worlds analysis for objectivity depends on the objective existence of possible worlds.

7. The fact that there are many logically distinct properties for determining T does not mean that there is any way of determining some maximally consistent set of propositions other than T. We might feel inclined to say “If the possibility that  $\sim V$  were realized, then T would not be the set of true propositions, because V would still belong to T and would be false.” This is not correct. “The set of true propositions would *in that case* not be the set of true propositions.” What case would that be? “The case in which V is false”? There is no such case. Its being possible that V is false does not consist in there being a “case” or “state of affairs” or “world” “in which” V is false.

This is not to deny that the term “proposition” has sometimes been used with a different meaning from ours, according to which “propositions” so called could change truth values. They might be sentences of some kind, for example, or “tensed propositions.” But properly chronologized propositions do not and cannot change truth value. If this is recognized by a philosopher who thinks of being necessary as being true at all times, the result will be the view that every true proposition is necessarily true. This is Spinoza’s view. (However, it is worth noting that Spinoza holds that some true propositions are such that their being false is possible. That is, he has a use of “possible” which is compatible with being necessarily false. It is a kind of “epistemic” possibility.) Leibniz may have been led to the idea of possible worlds to avoid this necessitarianism. This attitude, that

possible worlds of some sort are needed to avoid Spinozism, is reflected in the saying that “those philosophers who go about saying loudly and defiantly, ‘There’s only one possible world, the actual one’ are either Spinozists or fools.”<sup>2</sup> The right answer to the threat of Spinozism is that the possibility of a proposition does not consist in its being possible for it to become true. So there is no need, having noted that this could not happen in this world, to find some other world for it to happen in, or to have already happened in.

8. Of course, if it were false that  $V$ , then lots of things would be different. Every proposition that entails  $V$  (and there are infinitely many distinct such propositions) would be false. This specification of what would be true could be extended further by adding all the propositions deducible from  $\sim V$  in conjunction with the laws of a genuine science, except for the vagueness of “genuine science” and the paucity of such science concerning such topics as the relative size of cities. We should not put up with just any true universal generalizations to determine what would be true if  $\sim V$ . We would need true “laws of nature.” But the distinction between laws of nature and mere accidental generalizations is vague and subjective. Even when it is objectively true that a candidate has been advanced with good reason and defended reasonably this does not mean that it has an objective property of being truly “natural.”

When  $Q$  follows from  $P$  either as a logical consequence or an analytic consequence or by a law of nature, the conditional “If  $P$  then  $Q$ ” may be called “independent.” By contrast, “If Smith is elected, I will be pleased” claims a connection which depends on facts additional to what is stated in the antecedent or available just from general scientific knowledge. There is no objective division between “independent” and “dependent” conditionals. While ever so many things which are not true would be true if  $\sim V$ , there is no such thing as “what would be true if  $\sim V$ .” Every  $P$  for which there is an “independent” conditional “If  $\sim V$  then  $P$ ” would be true if  $\sim V$  were true. But this does not determine a set. A “dependent” conditional is aptly named. To the question whether such a conditional is true or false, it is appropriate to reply, “It depends – on what, if anything, you mean.”

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<sup>2</sup> Peter van Inwagen, “Two Concepts of Possible Worlds” reprinted in *Identity, Ontology, and Modality: Essays in Metaphysics* (Cambridge: Cambridge University Press, 2001), 206-42. Page 232 note 19. Note that, while I reject Spinozism, I only say loudly and defiantly that there is just one maximal consistent set of propositions, refraining from calling it the “actual world.” However, even if I do happen to instantiate the above generalization, this is at best an accidental truth, not a lawlike one.

It is true of the proposition (A) that  $2+2=4$ , that it would be true if  $\sim V$ . This is simply because (A) is necessarily true and so would be true no matter what. If we say that the proposition (L) that Lynchburg is the largest city in Virginia is such that it would be true if  $\sim V$ , this saying lacks a clear meaning. It is clear to say that (L) would be true if  $\sim V$  because (L) is necessarily true. Clear, because clearly necessarily false, since (L) is contingently false. “P would be true if Q were” is understandable if it is obvious that P is independent of Q. It is understandable along a different line if there is a law that Q would guarantee P that is known to the hearers. But “what would be true if Q were true” is not clear for general Q, just by the grammatical construction.

It can be good to hope that our dreams will come true and in the same spirit we can speak of realizing our possibilities. Such possibilities may be represented, that is, described, by contingent propositions, as when we say that it is possible that Mary will become president. But the proposition that Mary will become president is either true now or false now and if true was true at the time of the Pharaohs. (This does not represent any restriction on Mary’s possibilities, such as undercutting her power to decide whether or not to run. That it is true now that I will eat dinner tonight, God willing, does not affect my power to decide to skip dinner.) Propositions in the proper sense of the term do not and cannot become true and the idea that a contingent proposition represents a person’s power of acting is a bad mistake. The possibilities which represent a person’s powers of action are not the possibilities in which the contingency of propositions consists. It is a necessary condition of its being in my power whether to skip dinner tonight that the proposition that I do so should be contingent. But that contingency is no significant basis for the power. It is just as contingent that I run a sub-four minute mile tonight, but that is quite definitely not in my power.

Alternate descriptions for T, such as TV, the set of propositions which are either true or identical to V, work by specifying part of the set. The number of specifications could be infinite, for example, using “1 is a number” “2 is a number” etc., as V was used in TV. We would only get the rest of T with something lame, such as “the rest of the true propositions.” Such a description as “propositions about Virginia Beach” would not do, since every proposition P is equivalent to “Everything is such that P.” Every proposition is about everything, so aboutness is not a good basis for individuating propositions.

9. Some hold that the notions of propositions and properties and absolute truth are risky and deserve suspicion. Others of us disagree; but we should all agree that they are incomparably clearer than “possible worlds.” There is nothing inherently

overextended in thinking about the proposition V. It is reasonable to think we can understand it perfectly well. This is not to ignore the point that the topic of city size can be problematic. But it is not wildly overconfident to expect that our social science is capable of clarity on such a topic. To reject the idea that we can get clear about some propositions and properties would be extremely pessimistic. The infinity of propositions suggested to us by the limitless applicability of logical operations does indeed warrant more modesty. But this trust in the power of logic only leads (those willing to go that far) to the one maximal consistent set T.

Having gone that far, the notion of possible worlds is still far short of the properly required clarification. It has been suggested that propositions can be defined in terms of possible worlds. The proposition that Virginia Beach is the largest city in Virginia would be the class of possible worlds in which it is the largest city in Virginia (or perhaps its counterpart is the largest city in the counterpart of Virginia). This definition avoids the blatant circularity of identifying the proposition with the class of worlds in which the proposition is true, only by economical wording. We can presume that those who offer such a definition would not also endorse the view of a possible world as a maximal consistent set of propositions.

It has been said that the idea of necessary truth can be defined in terms of counterfactuals. The claim that p is necessarily true would mean "If  $\sim p$  were the case then  $A \& \sim A$  would be the case" for any arbitrarily chosen A. On the contrary, such a "saying" as "If 7 were not a prime number, then  $V \& \sim V$  would be the case" does not make good sense. It can be subjected to arbitrary interpretation designed to fit it into a general theory about possible worlds and counterfactuals. In such a theory a convention establishing such an inter-theoretical connection between necessity and counterfactuals could be understandable. That should not be confused with establishing the alleged connection between necessity and counterfactuals.

This is not to deny that from the hypothesis that 7 is not prime we can construct a valid proof that 7 both is and is not divisible only by itself and 1. And from that explicit contradiction we can derive any arbitrary proposition Q, including any explicit contradiction. It is not obvious that such a proof is available starting from the denial of just any necessary proposition. But in any case, the existence of such a derivation is not the same thing as a proof of the alleged counterfactual. A *reductio* proof does not in general show what would have been the case had the hypothesis been true. It merely shows that the hypothesis could not have been true. We might naturally say that the *reductio* shows what would have had to have been the case in order for the hypothesis to be true. This is still

not to establish a counterfactual. Showing what would have had to have been the case is not showing what would have been the case. (You may be tempted to reply that if it would have had to be the case that P then it would have been the case that P had to be the case. Please reconsider. That alleged consequent is nonsense.) Natural tolerance and charity will lead us to understand “If  $\sim p$  were the case then  $A \& \sim A$  would be the case” as a summary or a promise of a *reductio*, but it would be an abuse of charity to take that as establishing the acceptability of the above definition.

10. I have always objected to possible worlds with a simple argument. If it is true that some proposition  $p$  is true in some possible world  $w$ , then it is necessarily true that  $p$  is true in  $w$ , since having  $p$  true is part of what it is to be  $w$  as opposed to some other world. [No doubt a formal treatment can be worked out which allows that  $T_{wp}$  (“ $p$  is true in world  $w$ ”) does not entail  $LT_{wp}$  (using ‘L’ for necessity). We might even have  $T_{wp} \& \sim T_w T_{wp}$  and other dizzying exotica. Still, it is reasonable to reject that and accept  $T_{wp} \rightarrow LT_{wp}$ .] Similarly, innocent reasoners naturally agree that  $T_a V$  (“It is true in the actual world that  $V$ ”) is equivalent to  $V$ . That is, to say that it is true in the actual world that  $V$  is equivalent to saying that  $V$ . Conjoining these reasonable concessions leads to the conclusion that it is necessarily true that  $V$ . Thus it seems that our natural understanding of possibility is not well served by the notion of possible worlds.

However, when I cited this problem to a distinguished philosopher, it was dismissed. In this exchange, we were, unfortunately laboring under the impression that the truth was not  $V$  but  $N$  (“Norfolk is the largest city in Virginia”). Hopefully we can work around this factual error here. We only need be clear what is being assumed as to the actual facts about city sizes, rather than worrying about what exactly are those facts. Anyway, the reply was as follows.

“There is no problem. The proposition ‘Norfolk is the largest city in Virginia’ is necessarily an element of any set of which it is a member. If  $X$  is the set of all true propositions (formulable from a given set of atomic constituents), then ‘Norfolk is the largest city in Virginia’ is an element of  $X$ . It is also necessarily an element of  $X$ . But it is not necessary that  $X$  is the set of true propositions. Some of the sets other than  $X$  that might have been the set of true propositions contain the proposition ‘Norfolk is not the largest city in Virginia.’ Hence it is not necessary that the proposition ‘Norfolk is the largest city in Virginia’ is an element of the set of true propositions. That proposition about the size of Norfolk retains its

contingency, consistently with the membership relation between elements and sets being necessary in any case in which it holds.”<sup>3</sup>

There remains this problem. There is no such thing as “the sets other than X that might have been the set of true propositions.” (Here I am assuming that  $X=T$  and that it does not in fact contain N, but rather, V. This modification makes no difference to the point at issue.) It is true that it might have been the case that some set other than X was the set of true propositions. But that does not mean that there is some set other than X, say X', such that X' might have been the set of true propositions. That there might have been a unicorn does not mean that some unicorn might have been.

If we were to focus on sets of propositions “formulable from a given set of atomic constituents” we might be working within LPC, where the notion of atomic constituents is meaningful. Then there would indeed be lots of maximal consistent sets of such propositions. But then it would be a misleading understatement to say that “it is not necessary that X is the set of all true propositions.” It would be necessary that such an X is not the set of all true propositions, since it would be denumerable. It is not being questioned here that V could be false or that if V were false then some set other than T would qualify as the set of all true propositions. It is just that there does not exist any set other than T which could qualify as the set of all true propositions. That a maximal consistent set would come into existence with the falsity of V does not mean there exists a maximal consistent set which would come into existence. Thus the possibility of  $\sim V$  cannot possibly consist in the existence of a maximal consistent set of propositions to which it belongs.

Furthermore, it is either false or badly misleading to say that V is necessarily a member of  $T(=X)$ , the set of all true propositions. As was noted earlier, V is necessarily a member of the set TV (propositions such that they are either true or  $=V$ ) and TV is contingently identical to T. V is necessarily identical to V but not necessarily true. Belonging to the set of true propositions is the same property as being true and so belonging necessarily would be being necessary, which V is not. Belonging to TV is not the same property as being true. It is a distinct property which happens as a matter of fact to determine the same set.

It must be conceded that the complaint that the notion of truth in a possible world leads to bogus necessities does not apply clearly to possible worlds viewed as sets of propositions. This is because saying that a proposition p belongs to a set S is not saying that p is true in S or even offering any means of making sense of “p is true in S.” No doubt the proposition that V belongs to T (that is, the proposition

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<sup>3</sup> Christopher Peacocke "The Past, Necessity, Externalism and Entitlement," *Philosophical Books* 42, 2 (2001): 106-17, 109.



that V belongs to the set of all true propositions) belongs to T, and the proposition that the proposition that V belongs to T, belongs to T, and so on and on; except that those are all the same proposition, namely, V. So there is no good sense in which “they” all belong to T or to any set of propositions, since there would not be separate members. Talk of worlds “in which” it is true that there are unicorns is thus not naturally translatable into the terminology of sets of propositions. Thus my old favorite possible worlds problem is somewhat inapt for the discussion in terms of sets of propositions. What is relevant here is the question as to whether my problem can justifiably be dismissed for the reasons just considered. I have argued those are not correct reasons.

Imagination, though its frailty must be duly noted, is the proper way to understand possibility. Properly understood, it shows us that possibility is not the possibility of becoming true or of being true contrary to what appears to us. The right way to explain to the students that it is logically possible that the University was never built does not require the point that for all they know, it really never was built, the whole appearance being managed by an evil genius. Rather, they should be led through imagining the area of the University during the relevant historical period, with no University being constructed during that time, right up to and including the present. That is how to show that the proposition that the world has never had the University has the property of possible truth, if we are to have any hope of showing such a thing. To say there is a world in which that proposition is true, or a maximal consistent set of propositions including it just encumbers the picture with false presumptions.

Spinozism is based on distrust of imagination as a guide to any genuine feature of propositions. It is ironical that Spinoza’s low estimate of imagination is well supported in Descartes’ writing and yet Descartes bases one of his principal arguments on what is clearly an appeal to imagination. He says that he can rationally feign that his body does not exist, but cannot do that with respect to his own existence. This comes to being able to imagine that he exists without a body but unable to imagine his body exists without a body. Spinoza’s response is to dismiss such flights of imagination as worthless as indications of what is true. The imaginer has no good sense of what would be required to bring about the conditions he thinks of himself as “imagining.”

This suggests the requirement that one should consider how the actual facts would have to be changed in order to bring about the alleged possible condition. This process of making adjustments to the facts might seem easy with respect to merely chance happenings such as coin tosses or quantum phenomena. But for many possibility candidates the changes seem to ramify endlessly, suggesting the

James Cargile

need for a new world. This leads into the idea of alternate possible worlds. It is a false lead. We do not have to accept Spinoza's low estimate of imagination. We should recognize it is the best guide we have to possibility. We can duly recognize its limitations without giving up claim to grasp (somewhat) a genuine property or sliding into claims to grasp a merely somewhat genuine property.

The target here has been the essentially meinongian realism of the ontology of possible worlds. Those who work in terms of possible worlds are likely to resist description as meinongian. It has been thought especially that this is mitigated by the switch to maximally consistent sets of propositions. That is not so. But this is nothing at all against the platonic reality of propositions and the eternal forms. Confusing platonism with meinongianism has been a frequent source of misunderstanding. We have been arguing against the latter, not for or against the former, but hopefully, combating the confusion can be a help to the larger cause.