

P. VAN INWAGEN

MODAL EPISTEMOLOGY

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Philosophy abounds in modal arguments. A surprisingly high proportion of these arguments have the following features: they are formally valid; one of their premises is far more controversial (doubtful, disputable, problematic) than any of the others; it is a modal premise.<sup>1</sup>

In all the most interesting arguments of this sort, the “crucial” modal premise is an assertion of possibility, a statement of the form ‘it is possible that  $p$ ’.<sup>2</sup> I would suppose that we find arguments that proceed from assertions of possibility more interesting than arguments that proceed from assertions of necessity for two reasons. First, we are inclined (at least initially) to regard assertions of possibility as easier to establish than assertions of necessity. Secondly, we are inclined (at least initially) to find it surprising that anything about how things are or must be can be deduced from a premise about how things might be; but it is hardly surprising that conclusions about how things are or must be can be deduced from premises about how things must be.

Here are three examples of interesting arguments whose crucial premises are assertions of possibility:

It is possible for there to be a perfect being (that is, a being that has all perfections essentially)

Necessary existence is a perfection

*hence,*

There is a perfect being;

It is possible that I exist and nothing material exist

Whatever is material is essentially material

*hence,*



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I am not a material thing;

It is possible that there exist vast amounts of suffering for which there is no explanation

If there exists an omniscient, omnipotent, and morally perfect being, there cannot also exist vast amounts of suffering for which there is no explanation

*hence,*

It is impossible for there to be a necessarily existent being that is essentially omniscient, omnipotent, and morally perfect.

Let us call such arguments “possibility arguments.” (This is no more than a handy tag. Many arguments that are not of this type – see note 1 – involve assertions of possibility.) Each of the three arguments I have laid out has had its advocates. But I know of no case in which a possibility argument has turned an atheist into a theist, a materialist into a dualist, or a theist into an atheist; I know of no case in which a possibility argument has changed any philosopher’s mind about anything. No one (I think) would now dispute the logical validity of the three possibility arguments. I have laid out; but a philosopher who rejects the conclusion of any of them will simply – I know of no exceptions to this generalization – reject (or at least refuse to accept) the crucial modal premise of the argument that has the unwelcome conclusion. One important defense of this cavalier approach proceeds by pointing out that possibility arguments can often be “inverted” to produce an argument for the denial of the conclusion of the original argument. For example:

It is possible that I exist and nothing immaterial exist  
 Whatever is immaterial is essentially immaterial

*hence,*

I am not an immaterial thing.

Having presented this “inversion” of our second argument, a materialist can proceed to argue as follows.

Whatever merit the crucial modal premise of your argument may have, you can’t expect the philosophical world to accept it unless you can show why it is somehow better or more reasonable than the crucial modal premise of the argument for the opposite conclusion that I have presented. And I don’t see how you can do that.

At any rate, until you have done it, the two arguments, so to speak, cancel each other out – and are therefore both without any force.

It is not always possible to “invert” a possibility argument. But it is always possible to replace the crucial modal premise of a possibility argument with the denial of its conclusion and to replace its conclusion with the denial of its crucial modal premise. The resulting argument will, of course, be valid if the original argument was valid, and those who reject the conclusion of the original argument will invariably claim to find the resulting “contrapositive” argument at least as plausible as the original argument.

The apparent inevitability of this sort of exchange when a possibility argument is put forward has naturally led philosophers to begin to think systematically about the status of our beliefs about modal matters. How do we know (or *do* we ever know?) the truth-values of assertions of possibility – or of any modal assertions? What kind of justifications can be given for theses of the form ‘Such-and-such is a possible [impossible, contingent, necessary] state of affairs [proposition, property]’? If we ever do know theses of this form to be true (or to be false), what is the source – or what are the sources – of this knowledge?

My own view is that we often do know modal propositions, ones that are of use to us in everyday life and in science and even in philosophy,<sup>3</sup> but do not and cannot know (at least by the exercise of our own unaided powers<sup>4</sup>) modal propositions like the crucial modal premises of our three possibility arguments. I have called this position “modal skepticism.”<sup>5</sup> This name was perhaps ill-chosen, since, as I have said, I think that we do know a lot of modal propositions, and in these post-Cartesian days, “skeptic” suggests someone who contends that we know nothing or almost nothing. It should be remembered, however, that there has been another sort of skeptic: someone who contends that the world contains a great deal of institutionalized pretense to knowledge of remote matters concerning which knowledge is in fact not possible. (Montaigne was a skeptic in this sense, as were, perhaps, Sextus and Cicero.) It is in this sense of the word that I am a modal “skeptic.”

One way to get an intuitive grasp of what I mean when I speak of “modal skepticism” is to consider the analogy of distance. In my view, many of our modal judgments are analogous to judgments of

distance made by eye. That is, they are analogous to judgments of the sort that we make when – just on the basis of how things look to us – we say things like, “That mountain is about thirty miles away” or “It’s about three hundred yards from that tall pine to the foot of the cliff.” Such judgments are not, of course, infallible, but in a wide range of circumstances they can be pretty accurate. There are, however, circumstances – circumstances remote from the practical business of everyday life – in which they are not accurate at all. People had no idea about how far away the sun and the moon and the stars were till they gave up trying to judge celestial distances by eye and began to reason. (“You can see a significant portion of the shadow of the whole earth on the moon when the moon is entering or leaving the earth’s shadow, so the moon must be a lot farther away than anyone would have guessed . . .”) Analogously, I should say, we are able to discern the modal status of some propositions in a way that, like our intuitive judgment of distance, is “non-inferential.” I know that it is possible that – that there is no intrinsic impossibility in its being the case that – the table that was in a certain position at noon have then been two feet to the left of where it in fact was. I know that it is possible (in this sense) that John F. Kennedy have died of natural causes, that it is impossible for there to be liquid wine bottles, and that it is necessary that there be a valley between any two mountains that touch at their bases. And, no doubt, reason – operating on a combination of “basic” modal knowledge like that displayed in the previous sentence and facts about the way the world is put together – can expand the range of our modal knowledge considerably.<sup>6</sup> And where reason cannot, strictly speaking, extend the range of our modal knowledge, it can perhaps extend the range of our reasonable belief about modal matters. I myself have argued for the impossibility of the “bodily transfer” cases that figure so prominently in discussions of personal identity, and for the impossibility of the moon’s being made of green cheese;<sup>7</sup> like most philosophers who offer arguments, I’d like to think that my arguments lend reasonable support to their conclusions.

All these things we can do. All these capacities we have. But I should say that we have no sort of capacity that would enable us to know whether the crucial premises of our three possibility

arguments are true – or whether it is possible for there to be a pure, phenomenal color in addition to red, yellow, green, and blue, whether it is impossible for there to be a three-inch-thick sheet of solid iron that is transparent to visible light, or whether it is necessary that the laws of physics have the same structure as the actual laws. To my mind, philosophers who are convinced that they can hold, say, the concept of transparent iron before their minds and determine whether transparent iron is possible by some sort of intellectual insight are fooling themselves. (They could be compared to an inhabitant of the ancient world who was convinced that he could just *see* that the moon was about thirty miles away.)

The illusory character of their conviction is sometimes disguised by talk of “logical possibility,” for it is often supposed that there is a species of possibility that goes by this name and that one can determine *a priori* whether a concept or state of affairs is logically possible. But there is no such thing as logical possibility – not, at least, if it is really supposed to be a species of possibility. Belief in the reality of “logical possibility” may be based, at least in part, on a faulty inference from the reality of logical *impossibility*, which is real enough. Logical impossibility is an epistemological category: the logically impossible is that which can be seen to be impossible on the basis of logical considerations alone – or, to be liberal, logical and semantical considerations alone.<sup>8</sup> A round square is logically impossible because a square must, by definition, have vertices or corners and a round thing must, by definition, have no corners, and a round square would therefore both have and not have corners. I do not want to dispute the cogency of arguments like this one. What I dispute is the contention that if a concept or state of affairs is not logically impossible, then it is “logically possible.” It hardly follows that, because a certain thing cannot be proved to be impossible by a certain method, it is therefore possible in any sense of ‘possible’ whatever. Suppose that the infallible Standard Atlas marks many islands as uninhabitable, none as inhabitable, and makes no claim to completeness in this matter. We could, if we liked, say that the islands marked ‘uninhabitable’ in the Standard Atlas were “cartographically uninhabitable.” In doing this, we should be calling attention to the fact that our knowledge that these islands were uninhabitable had a certain source. But would

there then be any sense in saying that an island was “cartographically inhabitable” just in the case that it was *not* cartographically *uninhabitable*? Very little, I should think. We *could* use words this way, but if we did we should have to recognize that “cartographical inhabitability” was not a species of inhabitability. (Similar points could be made about mathematical impossibility and “mathematical possibility.”)

Perhaps at this point some readers will protest that they are puzzled about what the object of my skepticism is. “You say you believe we have no knowledge of whether certain concepts or states of affairs are possible – but what is this ‘possibility’ knowledge of which you are skeptical *about*? It is not epistemic possibility, and (you say) it is not logical possibility, and it is obviously not supposed to be physical possibility or biological possibility or technological possibility or any of the other kinds of possibility with which we are familiar. What is it, then?” It is what ties all these “qualified possibilities” together and makes them all species of a genus – the genus “possibility.” Take physical possibility, possibility given the laws of nature. A proposition is physically possible if its conjunction with the laws of nature is . . . well, *possible*. Possible *tout court*. Possible *simpliciter*. Possible *period*. Explanations come to an end somewhere. I can say only that by possibility I mean possibility without qualification. If there were no such thing as modality without qualification, there could be no qualified modalities like physical and biological possibility and necessity. If we understand “qualified” modal statements (of any sort), we must understand “unqualified” modal statements.<sup>9</sup>

Let us return to the topic of our capacity for making (warranted) modal judgments. Many philosophers have a far more sanguine view of this capacity than I. They are very confident that they can make philosophically interesting modal judgments about concerns remote from everyday life, and they are impatient with anyone who challenges their claim to have this ability. Richard Gale is an excellent example of such a philosopher.<sup>10</sup> Gale does not bother to argue for the conclusion that he is able to make philosophically interesting modal judgments about concerns remote from everyday life. Rather, he takes this to be self-evidently true. He is quite sure that I simply refuse to admit that human beings have epistemic powers that they

just obviously do have. (He believes that my denial that we have these powers is grounded in a desire to be able to deploy various “for all anyone knows, such-and-such is impossible” judgments in responding to the Argument from Evil, but, for present purposes, that’s neither here nor there.) He has said that if my own capacity to make modal judgments is really as limited as I say it is, I must be regarded as modally challenged, as someone who “cannot modalize like normal people do.” But I *can* “modalize” like normal people, and so can he. What he *can’t* do, apparently, is to discriminate those cases in which his modal judgments are products of his ordinary human powers of “modalization” from those that are based on his immersion in a certain philosophical environment – an environment composed of philosophers who unthinkingly make all sorts of fanciful modal judgments because *they’ve* always been surrounded by philosophers who unthinkingly make the same sorts of fanciful modal judgments. He is as unaware of his immersion in this environment as a fish is of its immersion in water. He is unaware that the modal beliefs he expresses or presupposes when he says, “We’d have had more room if we’d moved the table up against the wall,” (e.g., that it was possible for the table to be up against the wall) and the modal beliefs he gives such confident expression to in his writings on philosophical theology have quite different sources. The former have their source in our ordinary human powers of “modalization” (for all that, they are not philosophically uncontroversial: they would be disputed by Spinoza); the latter have their source in his professional socialization, in “what his peers will let him get away with saying.” To adapt the analogy I used earlier, he could be compared to a Greek mariner of Homeric times who thinks that his (well-grounded) belief that the mountain that has just appeared on the horizon is about thirty miles away and his belief that the moon is about thirty miles away stem from the same source, to wit, his ability to judge distance by eye.

So much for the modal knowledge I think we do not have. Let me now turn to the modal knowledge I think we do have. Although I do not doubt that we have some modal knowledge, I regard much of this knowledge as mysterious. Some modal statements, I have said, we know by reasoning from what I have called “basic” modal knowledge – simple, obvious modal statements whose truth we are

somehow in a position to know –, together with some facts about how the world is constructed. But how do we get started in this reasoning? How do we know the “simple, obvious” modal statements to be true? What is the ground of “basic” modal knowledge? I do not know how to answer these questions.

Let me try to make it clearer what questions it is I do not know how to answer. I do not mean to imply that *all* our modal knowledge is either “basic” modal knowledge or obtained by logical or mathematical deduction from basic modal knowledge and “facts about how the world is put together.” We can validly deduce the conclusion ‘It is possible for there to be orchids’ from the non-modal premise ‘There are orchids’. And the proposition ‘It is a necessary truth that all bachelors are unmarried’ can be established by reflection on logic and the meanings of words.<sup>11</sup> Other necessary truths can be established by mathematical reasoning. (And, presumably, some people *know* that it is possible for there to be orchids and that it is necessary that all bachelors are unmarried and that any function continuous on a closed interval must necessarily attain a maximum value in that interval. This knowledge is not based on what I have called basic modal knowledge and I do not regard it as mysterious.) The questions I do not know how to answer – there are two – pertain to propositions whose truth-values cannot be discovered by reflection on logic and the meanings of worlds or by mathematical reasoning. First, how can we know that (or find out whether) a proposition is possible when we do not know that it is true – that is when we either know that it is false or do not know whether it is true or false? Secondly, how can we know that (or find out whether) a proposition that we know to be true is also necessary? We should note that it is far from evident whether there is any very close connection between these two questions. We certainly *do* know that it is possible for the chair to have been in some other position at noon; it is less clear whether we know of *any* proposition that it is a necessary truth if it cannot be shown to be true either by reflection on logic and the meanings of words or by mathematical reasoning.

Let us call the area of philosophy that attempts to provide answers to these two questions “modal epistemology.” This term (like “possibility argument”) should be regarded as merely a convenient label. There are many statements – for example, ‘If a



proposition is known to be an instance of a theorem of first-order logic, then it is known to be a necessary truth' – that it would be natural to call theses of “modal epistemology” but which do not belong to the special domain I am giving this name to.

Modal epistemology is a subject about which little is known. In my view, at least, I know a good deal about the epistemology of non-modal statements. For example, I would say that we know many propositions to be true on the basis of observation. This may not be a very interesting thesis, but it is true and we know it to be true. What *is* interesting is the fact that there is no such truism that one can cite in the case of what I am calling basic modal knowledge. The table could have been two feet to the left. Of course it could have. We *know* that. We know that the table's having been two feet to the left is not among the things that are intrinsically impossible. There is an intrinsic impossibility in the notion of a round square; there is *probably* an intrinsic impossibility in the notion of faster-than-light travel; there *may* be an intrinsic impossibility in the notion of transparent iron. But we *know* – despite the best efforts of Spinoza to prove that falsity is coextensive with impossibility – that there is no intrinsic impossibility in the table's having been two feet to the left. We know – but *how* do we know? Here is one tempting answer to this question: we know this because we have constructed and examined intellectually a counterfactual scenario according to which the table *was* two feet to the left of its actual position (this morning it occurred to my wife that the room would look nicer if the table were two feet to the left, so she moved it) – or, at any rate, because we have constructed and examined such scenarios in many similar cases in the past and know somehow that the present case is like those past cases in all relevant ways. But this tempting answer does not really explain how we know that the table could have been elsewhere. The scenario we construct, after all, will be of no use if it is impossible: even if  $p$  is a possible proposition, considering an impossible scenario according to which  $p$  was true would not enable us to know that  $p$  was possible. It is, moreover, doubtful whether considering a possible scenario according to which  $p$  was true would enable us to know that  $p$  was possible unless we *knew* that the scenario itself was possible. It is, finally, doubtful whether constructing a scenario we *knew* to be possible would show us *how*

we knew that something involved in the scenario was possible unless we knew *how* we knew that the scenario itself was possible. (And how should we know how we knew that the scenario itself was possible? – by constructing a second, “larger” scenario that included causal antecedents of the events in the original scenario?) But if we know how we know it is possible for my wife to have certain thoughts that she did not in fact have – we no doubt *do* know that this is possible –, we should certainly know how we know that it is possible for the table to have been two feet to the left.

Fortunately, we do not have to have an adequate account of how we know statements of a certain type in order to know some statements of that type or to know that we know some statements of that type or to know that we know a given statement of that type. But I am convinced that whatever it is that enables us to determine the modal status of ordinary propositions about everyday matters, this method or mechanism or technique or device or system of intuitions or whatever it should be called is of no use at all in determining the modal status of propositions remote from the concerns of everyday life. I am convinced, moreover, that there is no *other* method or mechanism or technique or device or system of intuitions that enables us to do this. (Other than the methods I have already mentioned: “deriving” possibility from actuality, and the use of logical or mathematical reasoning, pure or applied. These methods will sometimes enable us to determine the modal status of propositions remote from the concerns of ordinary life – that there are neutron stars; that there are physical objects whose space-time trajectories are space-like –, but they will not enable us to determine the modal status of just any proposition remote from the concerns of ordinary life. In particular, they will not enable us to discover whether the crucial modal premises of “possibility arguments” are true or false.) That is, I am what I have called a “modal skeptic.”

I will close by briefly considering a recent attempt to explain the basis of our modal knowledge, and will argue that this account supports modal skepticism. Although I am not perfectly satisfied with this account, I believe it has some very attractive features, and is certainly more sophisticated than any other account of modal knowledge. I will neither attack nor defend this account, but will rather try

to explain why I believe that anyone who accepts this account should be a modal skeptic.

According to Stephen Yablo,<sup>12</sup> a proposition  $p$  is conceivable for me just in the case that I can imagine a possible world I take to verify  $p$ . (A world that I take to verify  $p$  is simply a world that seems to me to be a world in which  $p$  is true.) Yablo is well aware that no finite being's powers of imagination are equal to the task of singling out a particular possible world. He reminds us, however, that we can imagine "a" possible world in the same sense as that in which we can imagine "a" representative of any type of thing. If I imagine, say, a tiger, for no number  $n$  will  $n$  be the number of stripes of the tiger I imagine – although the tiger I imagine will no doubt have the property "for some  $n$ , having  $n$  stripes." The situation is similar when I imagine a possible world (that is, when I imagine a possible world having some specified feature or features).<sup>13</sup> Suppose, for example, that I attempt to imagine a world in which George Bush was re-elected in 1992. It is unlikely that my effort will in any way involve the state of higher education in Pakistan in the year 1957 – although, of course, in every world in which Bush won re-election, something or other was the case as regards higher education in Pakistan in 1957.

Yablo argues that, if I am able to imagine a world I take to verify  $p$ , I am thereby *prima facie* justified in believing that  $p$  is possible. (I will discuss only those parts of Yablo's thesis that pertain to *prima facie* justification.) This seems to me to be a step in the right direction. To assert that  $p$  is possible, after all, is to commit oneself, willy-nilly, to the thesis that there is a whole, coherent reality – a possible *world* – in which  $p$  is true, of which the truth of  $p$  is an integral part. To assert that it is possible for the moon (or a thing in the moon's actual orbit that looks like the actual moon when observed from the surface of the earth) to be made of green cheese is to commit oneself, willy-nilly, to the thesis that a physical universe in which a moon-like thing made of cheese came into existence and continues to exist is possible, that there are possible laws of nature and possible initial conditions that permit such a thing.<sup>14</sup> (Or, if the object is supposed not to have arisen in the natural course of events, but to be literally miraculous, to the thesis that there could be a supernatural agency that was capable of creating and sustain-

ing it and which either had a good reason to create and sustain a huge ball of cheese in orbit around the earth, or which might create and sustain such a thing without having any good reason to do so.) Although it is in a sense trivial that to assert the possibility of  $p$  is to commit oneself to the possibility of a whole, coherent reality of which the truth of  $p$  is an integral part, examination of the attempts of philosophers to justify their modal convictions shows that this triviality is rarely if ever an operative factor in these attempts.<sup>15</sup> A philosopher will confidently say that a (naturally) purple cow is possible, but he or she will not in fact have devoted any thought to the question whether there is a chemically possible purple pigment such that the coding for the structures that would be responsible for its production and its proper placement in a cow's coat could be coherently inserted into any DNA that was really cow DNA – or even “cow-like-thing-but-for-color” DNA. In a way, of course, it is understandable that this philosopher will not have devoted any thought to this question, for, in the present state of knowledge, it is not possible to devote any thought to it. Either the structural formula for such a pigment is already *there*, lurking Platonically in the space of chemical possibility, or it is not. And – so far as I know – no one has any reason to assign any particular subjective probability, high or low or middling, to the thesis that it *is* lurking there. But if a philosopher has not attempted to do something like this, then that philosopher has not, in any useful sense, attempted to imagine a possible world in which there are naturally purple cows. Therefore, if Yablo's general thesis is right, and if *I* am right in my assertion that in the present state of knowledge no one is able to imagine a possible world in which there are naturally purple cows, it follows that (if there is no other source for prima facie justified modal beliefs than the one Yablo puts forward; he has offered this as a sufficient, not a necessary condition for prima facie justification for modal beliefs), no one is even prima facie justified in believing that naturally purple cows are possible. It must be emphasized that our being unable to imagine such a world in no way lends any support to the thesis that a naturally purple cow is *impossible*. Yablo has an interesting proposal about what imaginings would provide prima facie justification for the thesis that a given state of affairs is impossible: roughly, that for every world  $I$  can imagine,  $I$  take it to contain the negation of that

state of affairs. I will not discuss this proposal. Here I wish only to point out that neither he nor I supposes that if one discovers that one is unable to imagine a world one takes to be a  $p$ -world, that discovery, by itself, provides one with even prima facie justification for the thesis that  $p$  is impossible. This is perhaps worth pointing out, since the statement that one is unable to imagine something often carries the “conversational implicature” that one takes that thing to be impossible.

In my view, we cannot imagine worlds in which there are naturally purple cows, time machines, transparent iron, a moon made of green cheese, or pure phenomenal colors in addition to those we know. Anyone who attempts to do so will either fail to imagine a world or else will imagine a world that only seems to have the property of being a world in which the thing in question exists. Can we imagine a world in which there is transparent iron? Not unless our imaginings take place at a level of structural detail comparable to that of the imaginings of condensed-matter physicists who are trying to explain, say, the phenomenon of superconductivity. If we simply imagine a Nobel Prize acceptance speech in which the new Nobel laureate thanks those who supported him in his long and discouraging quest for transparent iron and displays to a cheering crowd something that looks (in our imaginations) like a chunk of glass, we shall indeed have imagined a world, but it will not be a world in which there is transparent iron. (But not because it will be a world in which there *isn't* transparent iron. It will be neither a world in which there is transparent iron nor a world in which there isn't transparent iron.) This sort of effort of imagination will, or so I should suppose, show that a certain proposition has the modal status “possible,” but the proposition will be a disjunctive one. Here are some of its disjuncts:

- Transparent iron exists
- The scientific community has somehow been deceived into thinking that transparent iron exists
- A crackpot physicist who thinks he has created transparent iron is the butt of a cruel and very elaborate practical joke
- A group of fun-loving scientists have got together to enact a burlesque of a Nobel Awards Ceremony.

And we *do* know that this disjunctive proposition is possible. We know it because we know of at least one of its disjuncts that *it* is possible and we know that a disjunction is possible if any of its disjuncts is possible. No doubt, by working our imaginations a bit harder, we could imagine a world in which some of the “unwanted” disjuncts failed. We might, for example, add to what we have already imagined a codicil to the effect that all the scientists in the cheering audience are sincere. But this would not rule out the second of the above disjuncts (“mass deception”). To rule *that* out, our imaginations would have to descend to “a level of structural detail comparable to that of the imaginings of condensed-matter physicists who are trying to explain superconductivity.” I concede that, although, if we wished to establish the possibility of transparent iron, we should have to operate at the same level of imagined detail as condensed-matter physicists, we might not be subject to the same constraints as they. When we, who are interested in questions of modal epistemology, ask whether transparent iron is possible, we are, of course, interested in “absolute possibility,” and not, like the working condensed-matter physicist, only in what is possible given the actual laws of nature. Perhaps, therefore, in attempting to imagine a world containing transparent iron, *we* could properly allow such things as Planck’s Constant and the electromagnetic coupling constant to vary in our imaginations. (And perhaps not. It is a profound question whether we should be justified in supposing that it was “absolutely possible” for the fundamental constants of nature to have any values other than their actual values.) In any case, so far as I know no one has imagined, at the necessary level of structural detail, a world – whether its laws are the actual laws or some others – in which there is transparent iron.

I do not know how to argue for this conclusion, but it seems evident to me that if no one has imagined a world in which there are naturally purple cows or transparent iron, then no one has imagined a world in which a perfect being exists (or does not exist), a world in which the imaginer exists but in which nothing material exists (or in which nothing immaterial exists), or a world in which there are vast amounts of suffering for which there is no explanation.<sup>16</sup> I should think that, however hard it might be to imagine a purple-cow world or a transparent-iron world, it would be even harder to

imagine the worlds that one would have to imagine if (on Yablo's account) one were to be *prima facie* justified in accepting the crucial modal premise of a possibility argument. If "the Wise Old Beings from the Center of the Galaxy" were to manifest themselves to me in a suitably impressive fashion, I should probably believe them if they told me that they had proved that the existence of transparent iron was, although inconsistent with the actual laws of nature, nevertheless "absolutely" possible. But I should be extremely skeptical if they told me that they had proved that a perfect being or an immaterial intelligence or inexplicable suffering were, although not actual, absolutely possible. It would be hard to convince me that even such beings as they were in a position to know these things – or even to have evidence that was relevant to evaluating their epistemic status.

I have argued that, if Yablo's account of what justifies modal beliefs is correct, we should be modal skeptics.<sup>17</sup> I am inclined to think that if his account is not the whole truth of the matter, it contains a great deal of the truth of the matter, and that the part of it that is right is enough by itself to justify modal skepticism.

#### NOTES

<sup>1</sup> But philosophers have employed many formally valid modal arguments that cannot be so described. Here is a trivial example: it is possible for there to be cases of justified true belief that are not cases of knowledge; hence, knowledge is not justified true belief. Kripke's arguments for the essentiality of origins or the impossibility of unicorns might provide non-trivial examples – at least for those who were willing to say that these arguments were formally valid or could easily be made so.

<sup>2</sup> Or, of course, an assertion of non-necessity – since 'it is possible that *p*' is equivalent to 'it is not necessary that not-*p*'.

<sup>3</sup> For example: we know that there could be a full-scale papier-mâché mock-up of a barn that looked like a real barn from a distance, or that the legs and top of this table might never have been joined to one another.

<sup>4</sup> It is plausible to suppose that one can learn from the testimony of others what one could not learn by the exercise of one's own unaided powers. It would be therefore consistent with my thesis for me to affirm, say, that I knew that a perfect being was possible because God existed and had informed me that He was a perfect being – or (to anticipate an example that I shall later discuss) that I knew that transparent iron was possible because the Wise Old Beings from the Center of the Galaxy had assured me that their physics (which surpasses human understanding) had demonstrated this possibility.

<sup>5</sup> *God, Knowledge, and Mystery: Essays in Philosophical Theology* (Ithaca and London: Cornell University Press, 1995), pp. 11–14.

<sup>6</sup> Suppose, for example, that we know that it is not possible for water to be a different physical stuff from the physical stuff it is – that no *other* physical stuff would be water (an example, perhaps, of “basic” modal knowledge); and suppose we know that water is the physical stuff composed of molecules formed by joining a hydrogen atom to hydroxyl radical (a “fact about how the world is put together”); then – or so at least many have argued – we can validly conclude that water is *essentially* hydrogen hydroxide.

For an interesting discussion of the ways in which reason, starting with a stock of “basic” modal knowledge, can extend our modal knowledge, see Phillip Bricker, “Plenitude of Possible Structures,” *The Journal of Philosophy* LXXXVIII (1991), pp. 607–619.

<sup>7</sup> “Materialism and the Psychological Continuity Account of Personal Identity,” forthcoming in *Philosophical Perspectives*; review of Richard Swinburne, *The Coherence of Theism*, *The Philosophical Review* 88 (1979), pp. 668–672.

<sup>8</sup> If there is logical impossibility, there is also logical necessity, for a state of affairs is logically necessary if and only if its negation is logically impossible. The logically necessary is that which can be seen to be necessary on the basis of logical (or semantical) considerations alone.

<sup>9</sup> What I have called possibility without qualification, some have called “absolute” or “intrinsic” or “ontological” or “metaphysical” possibility. The first two seem good enough names. I don’t find “ontological” or “metaphysical” particularly appropriate tags, however. I don’t think that unqualified or absolute or intrinsic possibility is in any clear sense an ontological or metaphysical concept. An analogy is perhaps provided by “truth without qualification” (as opposed, for example, to scientific, metaphorical, approximate, or contingent truth). One *might* call “truth without qualification” ontological or metaphysical truth, but these wouldn’t be particularly appropriate tags.

<sup>10</sup> See his “Some Difficulties in Theistic Treatments of Evil,” in Daniel Howard-Snyder, ed., *The Evidential Argument from Evil* (Bloomington and Indianapolis: Indiana University Press, 1996), pp. 206–218.

<sup>11</sup> That Hesperus is necessarily identical with Phosphorus can be established by the joint application of the theorem ‘ $x = y \rightarrow \Box x = y$ ’ and the semantical thesis that ‘Hesperus’ and ‘Phosphorus’ are “rigid designators” – or at least it can if that semantical thesis has itself been “established.”

<sup>12</sup> “Is Conceivability a Guide to Possibility,” *Philosophy and Phenomenological Research* LIII (1993), pp. 1–39.

<sup>13</sup> Yablo rightly distinguishes *objectual* from *propositional* imagining. (Consider, for example, the difference between “imagining a tiger” and “imagining that one encounters a tiger.”) The kind of imagining that figures in his epistemological thesis is objectual imagining. Perhaps, therefore, it would be better to state his thesis in terms of “imagining a cosmos” or “imagining a universe,” since most philosophers – David Lewis, of course, is the notorious exception – take “possible worlds” to be states of affairs or other such proposition-like entities.



<sup>14</sup> Compare my discussion of the “green cheese” case in the review of Swinburne’s *The Coherence of Theism* cited in n. 7.

<sup>15</sup> There is a wonderful article about this that I never miss a chance to commend: George Seddon, “Logical Possibility,” *Mind* 81 (1972), pp. 481–94. See also my “Ontological Arguments,” *Noûs* 11 (1977), pp. 375–95. (Reprinted in the collection cited in note 5.) This essay contains a discussion of the “transparent iron” case. See also Paul Tidman, “Conceivability as a Test for Possibility,” *American Philosophical Quarterly* 31 (1994), pp. 297–309.

<sup>16</sup> As to the last of these: would it not do simply to imagine a world in which vast numbers of innocent sentient creatures fry on red-hot griddles at every moment at which they exist? But this state of affairs is incompatible – this modal term is to be understood in its “absolute” sense – with the existence of an omniscient, omnipotent, morally perfect being. (Or let’s assume so. That some state of affairs involving absolutely inexplicable suffering is incompatible with the existence of such a being is the other premise of the possibility argument whose crucial modal premise is the possibility of such a state of affairs.) To imagine a *world* in which this state of affairs obtains, therefore, is to imagine a world in which there is no such being. And what would justify one in believing that one had imagined a world in which there was no such being? To imagine an enormous griddle on which vast numbers of innocent creatures are tortured pointlessly is not to imagine a world, a whole coherent reality. The *absence* of objects “external” to this situation but absolutely incompatible with it must somehow be a part of one’s imaginings if one is to have imagined a world in which it obtains. An omnipotent and omniscient being, or so I should imagine, would have to be invisible and omnipresent. How does one go about imagining the absence of an invisible and omnipresent being – as opposed to failing to imagine the presence of such a being? I see no answer to this question. The suggestion that one can imagine an enormous griddle on which vast numbers of innocent creatures are tortured pointlessly is thus very like Hume’s contention that one can imagine something’s coming into existence without a cause. It is easy enough to imagine something’s coming into existence and not to imagine a cause of its coming into existence; it is something else, and rather more difficult, to imagine something’s coming into existence and also to imagine the absence of any cause of its coming into existence.

But this is only the first word on this topic, not the last. The issues the example raises are too complex to be resolved in a single footnote. As things stand, it might well be objected that if the argument of the preceding paragraph were correct, a parallel argument would show that one couldn’t imagine a chair’s having been two feet to the left of where it was at noon today, since one couldn’t imagine, say, the absence of an omnipotent being who, for some location, decreed in every possible world in which the chair existed that it be in *that* location at noon today. This is a very good point, but to address it, I should need to leave the topic of modal epistemology and discuss the pragmatics of argument, the purposes for which arguments are offered and the occasions on which various dialectical “moves” are proper. A hint: although I know that the chair could have been two feet to the left of where it was at noon (and therefore know that Spinoza was wrong), it

would have dialectically improper of me to present this piece of modal knowledge to Spinoza – *or* to someone who really did believe that God assigned to each physical object a spacetime trajectory that was invariant across possible worlds – and to have claimed thereby to have refuted his position.

<sup>17</sup> Stated with more care, my thesis is as follows. Consider those propositions whose truth-values cannot be determined by logic and reflection on the meanings of words or by the application of mathematical reasoning. Among those, consider those whose truth-values are unknown to us or which are known to be false. If the *only* way to determine whether a proposition in this category is possible is by attempting to imagine a world we take to verify this proposition, then we should be modal skeptics: while we shall certainly know some propositions of this type to be possible, we shall not be able to know whether the premises of our illustrative possibility arguments are true; and neither shall we be able to know whether it is possible for there to be transparent iron or naturally purple cows.

*Department of Philosophy*  
*The University of Notre Dame*  
*Notre Dame, IN 46556*  
*U.S.A.*