The Varieties of Necessity

Necessity abounds. There are the necessary truths of logic, mathematics and metaphysics, the necessary connections among events in the natural world, the necessary or unconditional principles of ethics, and many other forms of necessary truth or connection. But how much diversity is there to this abundance? Are all necessary truths and connections reducible to a single common form of necessity? And if not, then what are the different ways in which a truth might be necessary or a necessary connection might hold?

It is the aim of this paper to show that diversity prevails. I shall argue that there are three main forms of necessity – the metaphysical, the natural and the normative – and that none of them is reducible to the others or to any other form of necessity. Thus what it is for a necessity or possibility of any of these forms to obtain does not consist in the obtaining of some other form or forms of necessity or possibility.

Although the focus of the paper falls squarely within the philosophy of modality, some of my arguments may be of broader interest. For certain currently fashionable views on scientific essentialism and ethical naturalism entail the collapse of forms of necessity that I would wish to keep distinct. Thus I have found it essential to indicate what it is in these views that I take to be in error; and this has required consideration of questions from within the metaphysics of natural kinds and the epistemology of ethical belief.

§1 Necessities

A proposition is necessary if it *must* be true and is possible if it *might* be true. On the face of it, there are different ways in which a proposition might be said to be necessary or possible. Suppose I ask, 'is it possible to get from London to New York in under an hour?'. Then I might answer 'No', meaning that it is impossible given the currently available means of transport; or I might answer 'yes', meaning that it is scientifically possible. Or again, suppose I ask 'is it possible to get from the earth to the sun in under 2 hours?'. Then I might answer 'No', meaning that it is scientifically impossible; or I might answer 'yes', meaning that it is logically possible.

Given that there are these different ways in in which a proposition might be necessary, then how are they related? Is it possible to define, or otherwise explain, some in terms of others? And if it is, then which are the most basic forms of necessity?[1]

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[1]I have taken necessity to be a feature of propositions but nothing of any importance for my purposes will turn on this assumption.

I suspect that many philosophers, in response to these questions, might be attracted to some version of modal monism. They would maintain that there was a single underlying modal notion in terms of which all others could be defined or understood.

However, philosophers of this persuasion might well be tempted to adopt different views of what that underlying notion was. Many philosophers of the 'old school' would take it to be that of logical necessity in the narrow sense. This is the sense in which it is necessary that anything red is red, though not necessary that nothing red is green or that I am a person. The philosophers of the 'new school', on the other hand, would take the single underlying notion to be that of logical necessity in the broad sense or what is sometimes called 'metaphysical' necessity. This is the sense of necessity which obtains in virtue of the identity of things (broadly conceived). Thus in this sense not only is it necessary that anything red is red or that nothing is both red and green, but also that I am person or that 2 is a number.

Depending upon which notion of necessity one starts with, there are two main strategies one might adopt for defining the other notions of necessity.[2] Suppose one starts with the narrow notion of logical necessity (or with some other suitably narrow notion). The main problem will then be to define the broader notions of necessity; and the obvious way to do this is by relativization. Consider the case of conceptual necessity - the necessity that holds in virtue of the identity of concepts. It will be necessary in this sense that nothing is both red and green though not necessary that I am a person. Now let it be granted that there are some basic conceptual truths - perhaps given by the *definitions* of the various concepts - and that the class of such truths can be defined without appeal to any modal notions (besides logical necessity). We might then define a proposition Q to be a conceptual necessity if it follows from the definitions, i.e. if the conditional, *if P then Q*, is logically necessary for some conjunction P of basic conceptual truths. The conceptually necessary truths, in other words, may be taken to be those that are logical necessary *relative to* or *conditional upon* the basic conceptual truths.

Suppose, on the other hand, that one starts with the broad metaphysical notion of necessity (or with some other suitably broad notion). The main problem will then be to define the narrower notions of necessity; and the obvious way to do this is by restriction. Consider the case of mathematical necessity, the form of necessity that pertains to the truths of mathematics. We may then define a proposition to be mathematically necessary if it is necessary in the metaphysical

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[2] I do not wish to suggest that these two strategies represent the only possible ways of defining one notion of necessity in terms of others.

sense and if, in addition, it is a mathematical truth - where this latter notion is presumably one that can be defined in nonmodal terms. In this case, the new form of necessity is defined by means of a restriction which can be stated in nonmodal terms (or, at least, without appeal to further modal notions).

I am inclined to think that the second of the two strategies *can* successfully be pursued. Given the notion of metaphysical necessity, the various narrower notions of necessity - be it logical, mathematical, conceptual, or the like - can each be defined by restriction.[3] Each of these other forms of necessity can, in other words, be regarded as a *species* of metaphysical necessity.

The feasibility of the first strategy, however, is open to serious doubt. It is, in the first place, not at all clear that metaphysical necessity can be defined in terms of logical necessity, for it is not clear that one can provide a nonmodal characterization of some basic metaphysically necessary truths from which all other metaphysically necessary truths will be a logical consequence. But even if one sets this problem aside and allows the use of both logical and metaphysical necessity, there would appear to be concepts of necessity that are broader still and yet equally resistant to definition.

The two main concepts of this sort are the concepts of natural and normative necessity[4]; and it is my aim in the rest of the paper to show how these concepts raise serious problems for the doctrine of modal monism. There are two main ways, in either case, in which the doctrine might be defended. It might be denied that either of the other concepts of necessity is genuinely broader than the metaphysical concept; natural, or normative, necessity should be regarded as a *restricted* form of metaphysical necessity. Or it might be maintained that the other concept is indeed broader and yet definable as a *relative* from of metaphysical (or logical) necessity. I have attempted to show, in each case, that neither line of defense can be made to work.

It is important to bear in mind some limitations in my approach. First, I have not directly addressed the question of whether there might be some other concepts of necessity that

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[3] Some of my reasons for thinking this are outlined in Fine [94], pp.9-10, but much more needs to be said on the question.

[4] Another possible candidate is the concept of historical necessity, that form of necessity for which the past is 'closed' yet the future may be 'open'. The interesting question of whether the concept of natural necessity is merely a special case of this other concept is not one that I shall consider. Nor do I consider the epistemic, deontic or tense-logical modalities since I do not view them as providing genuine forms of necessity.

cannot be understood in terms of the three upon which I have focused. One should think of the discussion as representing an 'end-game' in which the other candidate concepts of necessity have been removed from the board. Second, I have not considered all possible ways in which one of the remaining concepts of necessity might be defined or understood in terms of others. But if there are others, then I do not know what they might be. Finally, my concern throughout the paper has been to arrive at the most basic modal concepts, i.e. at those modal concepts that are not to be defined or understood in terms of other modal concepts. I have not directly considered the question of whether it might be possible to break out of the sphere of the modal and understand it in altogether different terms. Thus my conclusions have no direct bearing on the issue of modal realism, i.e. on whether the modal facts are themselves most real; for I may merely have tracked modality down to its penultimate source, within the sphere of the modal, rather than to a possibly more ultimate source[5].

§2 Natural Necessity: Subsumption

Natural necessity is the form of necessity that pertains to natural phenomena. Suppose that one billiard ball hits another. We are then inclined to think that it is no mere accident that the second billiard ball moves. Given certain antecedent conditions and given the movement of the first ball, the second ball *must* move. And the 'must' here is the *must* of natural necessity.

The above elucidation of natural necessity does not presuppose that the notion has primary application, or even *any* application, to natural law. However, it is very plausible to suppose that if there are particular necessary connections of the above sort, then there are also general necessary connections of this sort. Thus not only will it be necessary that this billiard ball will move in these particular circumstances, it is also necessary that any billiard ball will move in relevantly similar circumstances.

What is the relationship between metaphysical and natural necessity? Is every natural necessity a metaphysical necessity? And is it therefore possible to regard the one form of necessity as a restricted form of the other?

The answer to these questions would appear to be a straightforward 'No'. For surely it is conceivable, and hence metaphysically possible, that the one ball should strike the other in the given circumstances without the other moving. And

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[5] All the same, my conclusions may provide some succor for the modal realist. For realism about possible worlds will not be plausible given that there are different primitive notions of necessity; and a reductive form of antirealism will not be plausible given that the modal does not supervene on the nonmodal.

surely it is conceivable, and hence metaphysically possible, that many of the natural laws that govern our universe should fail to hold, that bodies should attract one another according to an inverse cube law, for example, rather than the inverse square law[6].

However, ever since Kripke [80], we have learnt to be suspicious of such considerations. For can we be sure that the hypothetical situation in which an inverse cube law is envisaged to hold is one in which the bodies genuinely have mass? Perhaps they have some other property somewhat like mass, call it 'schmass', which conforms to an inverse cube law. And can we be sure that in the hypothetical situation in which the second billiard ball is envisaged not to move is one which genuinely contains the given billiard balls rather than some schmassy counterparts?

In either of these cases, the proposed counter-example would fail; and if the same is true for any other counter-example that might be proposed, then the way would be clear towards maintaining that every natural necessity was a metaphysical necessity. Indeed, several philosophers have recently been attracted towards such a view[7] and it might also be thought to be especially congenial to my own way of thinking. For I take metaphysical necessities to be those that are rooted in the identity of 'things' (Fine [94], p. 9); and so natural necessities might then be taken to constitute the special case in which the things in question are the natural properties or kinds. Natural necessities would simply be the special case of those essentialist truths which arise from the identity of natural kinds.

However, it seems to me that the scope of these counter-considerations is severely limited and that the restrictionist view remains highly problematic.[8] It may be conceded that we should exercise caution in judging a natural necessity to be metaphysically contingent - for what is taken in a given hypothetical situation to be a property or kind that figures in the natural necessity may be no such thing. But this, I believe, should merely lead us to adopt a more discriminating view as to which natural necessities are metaphysically contingent rather than to give up the idea that there are any such necessities.

To see why this might be so, let us return to the putative

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[6] For expository purposes, I take an over-simplified view of what the scientific laws are.

[7] They include Shoemaker ([80], p. 244 and [98]), Swoyer [82] and Ellis [99]. Kripke raises the issue in ([80], pp.99, 164) but without taking a stand.

[8] Further criticisms of the subsumptionist view are made in Alan Sidelle's paper from this volume.

counter-example to the metaphysical necessity of the inverse square law; and let us concede that the envisaged hypothetical situation involves schmass, rather than mass, and that the counter-example therefore fails. Still, that very same hypothetical situation may be used to provide a counter-example to the metaphysical necessity of a *different* natural necessity. For consider the proposition that there is no schmass (i.e. that there are no instances of schmass). Then this proposition should be taken to be a natural necessity. For our original judgement was that the inverse square law was a natural necessity, though not a metaphysically necessity. Now that we see that the metaphysically possible worlds in which it was taken to fail are ones with schmass rather than mass (and given that our universe is taken to be completely governed by the Newtonian Laws), we should take it to be a natural necessity that there is no schmass. In either case, the 'fabric of the universe' is envisaged as excluding a certain sort of behaviour - whether this be the deviant behaviour of mass or the normal behaviour of schmass. Moreover, my opponent should concede it to be a metaphysical possibility that there is schmass, since it was through postulating schmass - or the like - that the original putative counter-example to the metaphysical necessity of the inverse square law was re-interpreted. And so he should grant that the absence of a schmass is a natural, though not a metaphysical, necessity.

Indeed, there is no reason in general why the sophisticated post-Kripkean should not agree with the naive pre-Kripkean as to which of the metaphysically possible worlds are naturally impossible. For whereas the pre-Kripkean will take such a world to be a natural impossibility because of the straightforward failure of a law, the post-Kripkean will take it to be a natural impossibility because of the instantiation of an alien property or kind. Thus even though sensitivity to the cross-world identity of natural properties or kinds may lead one to re-describe the hypothetical situations in which a natural law is taken to fail, it should not lead one to reject the natural impossibility of those situations.

It might be objected that there is not even a *putative* counter-example to the metaphysical necessity of the inverse square law. But such a view is too outlandish to deserve consideration[9]; and once we have the putative counter-example then we have the basis, if I am right, for deriving an actual counter-example. It might also be objected that the proposition that there is no schmass remains true in the hypothetical situation in which the inverse square law is thought to fail, since it means that there is no *body* with schmass and, in the

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[9] Perhaps even for someone like Shoemaker ([98], fn. 11), who believes that nothing but H_2O could behave the way water ordinarily behaves, since what is at issue here is whether something other than water might behave in some other way.

hypothetical situation, there are only schbodies, not bodies. Thus 'body' goes the way of 'mass'. But, if that is the objection, then let us formulate the proposition that there is no schmass with an absolutely unrestricted quantifier: there is nothing whatever with schmass. Or, alternatively, we might use the proposition that are no schbodies (again with an unrestricted quantifier).

A more serious objection concerns the existence of the relevant properties or kinds. It might be thought that the properties or kinds that figure in natural law are *immanent* in the sense of only existing if instantiated. The kind *schmass* will therefore not exist. It might also be thought that a proposition exists only if the items it directly concerns exist. So since the kind *schmass* does not exist, nor does the proposition that there is no schmass; and so we have no counter-example to the subsumption of natural to metaphysical necessity.

Whether this is so depends upon exactly what the subsumption thesis is taken to be. If it is the thesis:
every (actual) proposition is such that it is natural necessity only if it is metaphysical necessity,
then no counter-example has been given under the stated assumptions. But if it is the thesis:
necessarily$_M$ every proposition is such that necessarily$_M$ it is a natural necessity only if it is a metaphysical necessity, or even the weaker thesis:
necessarily$_M$ every proposition is such that actually it is a natural necessity only if it is a metaphysical necessity,[10]
then there is a counter-example. For the proposition that there is no schmass exists in the hypothetical situation in which there is schmass and this very proposition is a natural necessity in the actual world though not a metaphysical necessity. Moreover, in standard formulations of modal logic, it is the stronger theses that are required if natural necessity is to be eliminable in favour of metaphysical necessity.

In any case, there are counter-examples that require no appeal to uninstantiated properties or kinds. Let P, Q, ... be an exhaustive list of all the kinds (or all the fundamental kinds) that there actually are. Then presumably it will be a natural necessity that every object (or every fundamental object) is of one of the kinds P, Q, ..., but it will not be a metaphysical necessity. Or, again, suppose that determinism is true and holds of natural necessity. Thus it is a natural necessity that every event has a cause. (Or, if we wish to avoid appeal to the notion of cause, we can say: it is a natural necessity that for any event *e* there is a preceding event *c* such that it is a natural necessity that *e* occurs only if *c* occurs.) But surely it is a metaphysical possibility that determinism be

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[10] I use the subscripts 'M' and 'N', here and elsewhere, to indicate the kind of necessity in question.

false. It would be absurd for my opponent to maintain that the hypothetical situation in which determinism appears to fail is one that does not really involve events or time. Thus, given that it is metaphysical possibility that determinism should hold, we have the metaphysical possibility of a natural necessity not being a metaphysical necessity.

We can even construct a counter-example on the basis of standard laws. Consider the inverse square law as an example. Now my opponent will maintain that this law is still true in the hypothetical situation in which there is schmass rather than mass, though vacuously. But surely he will concede that even though the law is true in this hypothetical situation it is not a *law* - or, at least, not a law that *prevails* - in that situation.[11] Indeed, if it were then, by parity of reasoning, the inverse cube law for schmass would have to be a law that prevails in our world; and surely it is not. But now whatever it takes to be a prevailing law, it seems clear that it is a natural necessity that the inverse square law is such a law. Not only is there no natural possibility of its failing to hold, there is no natural possibility of its failing to be a law that governs the universe. But then the proposition that the inverse square law is such a law is another actual counter-example to the thesis that every natural necessity is a metaphysical necessity.

The lesson to be learnt from these counter-examples is not that we should go back to our pre-Kripkean intuitions of metaphysical contingency but that we should attempt to be more discriminating about which laws of nature are to be regarded as metaphysically contingent and which as not. There is an intuitive distinction to be drawn here. That electrons have negative charge, for example, strikes one as metaphysically necessary; it is partly definitive of what it is to be an electron that it should have negative charge. But that light has a maximum velocity or that energy is conserved strikes one as being at most naturally necessary. It is hard to see how it could be partly definitive of what it is to be light that it should have a given maximum velocity or partly definitive of energy that it should be conserved.[12] It is equally a defect of the old view that saw all laws of nature as metaphysically contingent and of the new view that sees them all as metaphysically necessary that they fail to heed this

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[11] Cf. Shoemaker ([80], p. 248), 'Nothing I have said precludes the possibility of there being worlds in which the causal laws are different from those that prevail in this world'.

[12] Lowe [00] has also stressed the metaphysical contingency of the values born by the fundamental physical constants and Chalmers ([99], 13-14) has stressed the metaphysical contingency of the conservation laws.

distinction; and rather than take a blanket view of the modal status of these laws, we should attempt to refine and systematize the intuitive discriminations that we are naturally inclined to make among them.[13]

Although I have emphasized the way in which natural necessities may out-run the metaphysical necessities, it seems to me that there is one respect in which this may not be true. For I am inclined to think that there are no distinctive *de re* natural necessities. Let us suppose that *x* and *y* are two particles and that it is a natural necessity that they attract one another (assuming, of course, that they exist!). Then it is plausible to suppose that this should follow from (a) its being a metaphysical necessity that each of the particles is of the kind that it is and (b) its being a natural necessity that particles of this kind attract one another. Thus the de re natural necessity will reduce to a de re metaphysical necessity and a de dicto natural necessity; and it might be thought that something similar should be true of any de re natural necessity or, indeed, of any form of de re necessity whatever. All forms of de re necessity (and of essence) will be fundamentally metaphysical, even though some forms of de dicto necessity may not be.

§3. Natural Necessity: Definition

Even if post-Kripkean sensitivity to the cross-world identity of natural kinds does not enable one to *subsume* natural necessity under metaphysical necessity, it might still appear to hold out the hope of defining it as a *relative* form of metaphysical necessity. For suppose we uphold the doctrine of immanent universals. We may then let the existence of natural properties or kinds be our guide to the natural possibilities for a given world, a possible world being a natural possibility relative to a given world if it contains only (or perhaps all and only) those natural kinds that exist in the world[14]. A world of schmass, for example, will not be a natural possibility since the kind *schmass* does not actually exist; and, in general, any objects that behaved in a nomically irregular way within a given

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[13] Thus I do not share Shoemaker's scepticism on this point ([80], 249-51). It is not that we need a general criterion for saying when we have one kind of necessity as opposed to another but a clearer conception of what, in particular cases, might plausibly be taken to be relevant to the identity of a given natural property. Where he sees a problem, I see an interesting project. The present distinction is somewhat akin to the Kantian distinction between the 'pure' and 'empirical' parts of science, which was later taken up by some of the logical positivists (see Friedman [94] for a general discussion).

[14] Clearly, the natural kinds should also be taken to include the various fundamental physical relations

world would have to be of kinds that do not actually exist and hence would belong to a world that was not a natural possibility. (And, of course, once given the naturally possible worlds, we can define the natural necessities as those that hold in every such world).

Instead of presupposing the doctrine of immanent universals in formulating the definition, as is often done, we may appeal instead to what is taken to be required for a kind to exist. Thus we may say that a world is a natural possibility if it instantiates only those kinds that are actually instantiated and thereby side-step the issue of the conditions under which a univeral exists. Nor is there any need to place such emphasis on instantiation as the condition for the existence of universals. Perhaps we can allow kinds to exist in the manner of Hume's missing shade through being suitably related to other kinds that exist, even though they are not themselves instantiated. If we free up the account in both these respects, then we are left with the general idea that the natural possibilities for a given world will turn upon the status and distribution of its natural properties and relations.

But accounts of this sort, it seems to me, are subject to a familiar form of objection. It is sometimes pointed out that two possible worlds might *merely* differ as to what is a natural necessity and that regularity-type views must therefore be mistaken, since they would be unable to distinguish between the two worlds. This objection will not work against the present view, since it might be argued that any difference in the natural laws would make a difference to the natural properties that exist in the two worlds. But a variant of the objection *can* be made to work.[15] Consider, for example, a metaphysically possible world w_N that is Newtonian. Then bodies in this world will have mass, be subject to force etc (or have something similar to mass and be subject similar to force, since actual mass is not itself strictly Newtonian). By the same token, there will be a metaphysically possible world w_M which is Schmewtonian. The bodies in this world behave like bodies in w_N but are subject to the inverse cube law or some other variant of the Newtonian Laws. The bodies in this world will not have mass, according to our opponent, but they will have something similar to mass, say schmass; and likewise for force etc. Now surely it is a natural possibility in both w_N and w_M that there be no bodies; after all, there is nothing in the natural laws of either world which requires that there be anything to which they apply. So there is going to be an empty world v_N which is a natural possibility for w_N and an empty world v_M which is a natural possibility for w_M. Since v_N is a natural possibility for w_N, it will verify all of the natural necessities of w_N; and

[15] Carroll advances a similar line of objection in [94], §3.1, though without attempting to take care of the rejoinder that the two worlds might differ in their natural properties.

so, since it is a natural necessity in w_N that there is no schmass, it will be a natural necessity in v_N that there is no schmass.[16] Moreover, since the world w_M contains schmass, we may safely assume that it is natural possibility in the empty world v_M that there be schmass; for it would be bizarre in the extreme to suppose that the non-existence of any bodies somehow precluded the possibility of there being schmass.[17] So the empty worlds w_M and v_N differ as to what is a natural possibility. But it is hard to see how there can be any difference in the status of their natural properties; for the natural properties that exist in the two worlds and their pattern of instantiation are just the same[18].

   A similar counter-example (though not subject to worries over empty space-time) runs as follows. Consider a metaphysically possible world w_D for which mind\body dualism is true. The world w_D may not consist of mental and physical events as we conceive them, but it will then consist of related kinds of events - the mental$_D$ and the physical$_D$, say. Let us suppose that epiphenomenalism is also true in w_D, so that the mental$_D$ and the physical$_D$ events of w_D are each subject to their own laws but with no nomological interaction between them. By the same token, there should be a metaphysically possible epiphenomenal world w_E in which the physicalistic events are subject to essentially the same laws as in w_D but the mentalistic events to somewhat different laws. It is reasonable to assume, or at least to allow, that the physicalistic events of w_D and w_E are of the same kind, even though\ the mentalistic events are not.

   Now surely it is a natural possibility in both w_D and w_E that, under given physical conditions, there be nothing mentalistic in the world. Thus there will be a mind-free world v_D which is a natural possibility for w_D and a physically similar mind-free world v_E which is a natural possibility for w_E. But then by the same line of reasoning as before, w_D and w_E will differ on what is a natural possibility (for the mentalistic part of the world) even though there is no difference in the 'status' or distribution of their natural properties.

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[16] I have assumed that natural necessity is subject to the S4 axiom, $\Box A \rightarrow \Box\Box A$. But even without the benefit of this assumption, it would be odd to suppose that, in w_N, the nonexistence of bodies somehow required the possibility of there being schmass.

[17] Alternatively, we could appeal to the assumption that natural necessity was subject to the S5 axiom, $A \rightarrow \Diamond[]A$, though nothing so strong is required in this particular case.

[18] One might maintain that the kind mass exists in v_N but not in v_M, but that is presumably only because the instantiation of mass is a natural possibility in the one but not the other, and so the concept of natural possibility is already presupposed.

Of course, if these counter-examples are correct then they tell, not only against the property-based definitions, but also against any other account that would make the natural possibilities supervene, as a matter of metaphysical necessity, upon the non-nomic facts.

There is, however, another, more radical objection to be made. So far I have argued that any definition of natural in terms of metaphysical necessity will be extensionally incorrect - there will be a difference, or at least a possible difference, in the propositions that fall under the definiendum and those that fall under the definiens. But it might be argued that even if we had an extensionally correct and noncircular account of natural necessity, it still would not be likely to provide an adequate definition.

We may illustrate the nature of the difficulty with the doctrine of logical fatalism. Suppose one holds, for whatever reason, that every truth is necessary. Then:

(*) for every proposition p, p is necessary iff it is true; and since this proposition is itself true, it follows:

(**) necessarily, for every proposition p, p is necessary iff it is true.[19]

But even the logical fatalist will not accept (**) as a correct *definition* of necessity, despite the presence of necessary coincidence and the absence of circularity, since it will be important for him to maintain that the necessity of a proposition does not *consist* in its being true. It so happens, if I may put it that way, that every true proposition is necessary; but the proposition's being true is not that in which its necessity consists.

Another, though somewhat more problematic, case is provided by the standard definition of logical necessity (narrowly conceived) in terms of invariance. For let it be granted, if only for the sake of argument, that:

necessarily$_M$, a proposition is logically necessary iff its truth is preserved under any substitution for its nonlogical constituents.

Still, it might be maintained that such invariance is not what it is for a proposition to be logically necessary. After all, the proposition that B.C. is not an angel remains true under any substitution for the constituent B.C. but is not, on that account, a necessary truth. And so why should it be any different in the logical case? What we have *at best*, on this view, is a definition of logical *truth*, rather than of logical *necessity*.

One might even argue against my proposed definition of metaphysical necessity in terms of essentialist truth along similar lines (Fine [94], p.9). I wish to claim:

necessarily$_M$, a proposition is metaphysically necessary iff

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[19] I here ignore the difficulties over including merely possible propositions within the scope of the definition.

it is true in virtue of the identity of some (possible) objects.

But it might be argued that what we have on the right is merely an account of the source of the proposition's truth and not of its modal status. Essentialist truth is no more capable than logical truth of conveying modal import.[20]

A similar problem, I suspect, is bound to arise for any proposed definition of natural necessity in terms of metaphysical necessity. For it will usually be possible to see such a definition as a case of relativization. Certain propositions will be picked out by means of a suitable description, call it 'being a law'; and a proposition is then taken to be a natural necessity iff it is entailed by the propositions that satisfy the description, i.e. by the laws.[21] But such an account is subject to the obvious objection that it does not provide an adequate account of the natural necessity of the 'laws' themselves. For where the proposition P is a law, its being a natural necessity, according to the definition, will consist in: (a) its being entailed by the various 'laws', including P itself; and (b) its being a law. But (a), which is merely a matter of self-entailment, can hardly contribute to the given proposition's being a natural necessity; and it will be hard to see, in any given case of (b), how the defining feature of a 'law' might constitute an adequate account of the *necessity* of the given proposition. Consider the definition proposed above by way of illustration. This may be put in the form: a proposition is a natural necessity iff it is entailed by the proposition that K_1, K_2, ... are the only kinds that there are, where K_1, K_2, ... is an inventory of all the kinds that there are. The 'law' here is the proposition that K_1, K_2, ... are the only kinds that there are and its being a 'law' essentially consists in its being true. But we are inclined to think that, in so far as it is a natural necessity that there are no other kinds, it is because there is something in the nature of the world that prevents there being other kinds; and the mere fact that there *are* no other kinds can hardly be taken to constitute an adequate account of what this force, or form of necessity, might be.

The general problem is that a definition of natural necessity as a form of relative necessity will tend to make the

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[20] Another illustration of the distinction is provided by Quine's arguments against analyticity, which have as their principal target a certain kind of truth, rather than a peculiarly modal status. Almog [91] draws a similar distinction between a 'primal', or constitutive, truth and its modal import.

[21] I have supposed that the laws are picked out by a description that is external to the entailment, but one might also provide an analysis of the form L → P, as long as one is prepared to resort to double-indexing, as in van Fraassen [77].

necessity of the propositions with respect to which the necessity is relative a trivial or insubstantial matter; and yet we are inclined to think that the necessity attaching to the laws and the like is not of this trivial sort. Any true proposition whatever can be seen as necessary under the adoption of a suitable definition of relative necessity. Any proposition that I truly believe, for example, will be necessary relative to the conjunction of my true beliefs and any proposition concerning the future will be necessary relative to the conjunction of all future truths. The problem therefore is to explain why the necessity that issues from the definition of natural necessity is not of this cheap and trivial sort; and I doubt, in the case of any otherwise reasonable definition that might be proposed, that this can be done.

One might wish to press the objection further and claim that no definition stated entirely in terms of metaphysical necessity could capture the peculiarly modal force of truths that are naturally necessary yet metaphysically contingent. Just as it has been supposed that there is a conceptual barrier between normative and non-normative concepts, so one might think that there is a conceptual barrier, not merely between modal and non-modal concepts, but also between different 'grades' of modality. But even though I would wish to endorse this more general claim, there is no need to appeal to it in arguing against the plausibility of particular accounts of what this peculiar 'modal force' might be.

I conclude that there appears to be no reasonable way of understanding natural necessity as a restricted or relative form of metaphysical necessity.[22]

§4 Normative Necessity: Naturalism

There is a familiar distinction between accidental and non-accidental generalizations within the natural sphere, but what is not so often appreciated is that a similar distinction can be drawn within the moral sphere. This may be illustrated by the claim that every war is wrong. For this might be meant in the sense that every war, in the circumstances that actually prevail, is wrong; or it might be meant in the sense that every war, in whatever circumstances might prevail, is wrong. In the latter case, the claim is taken to be necessary - to hold unconditionally, or in all possible circumstances; while in the former, the claim is not taken to be necessary, but merely to hold conditionally upon the circumstances that actually obtain.

The distinction between accidental and necessary generalizations in natures is often drawn in terms of the ability to sustain counterfactuals. A necessary generalization

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[22] Among recent theorists, Armstrong ([83], pp. 92-3) and Fales ([93], p. 140) have been attracted by the view that some form of natural necessity or necessary connection might be primitive.

that all F's are G's will sustain the counterfactual 'if this were to be an F it would be a G', while the corresponding accidental generalization will not. The distinction may be drawn on a similar basis in the moral case. For the de facto pacifist need not commit himself to the view that if there were a war of such and such a hypothetical sort then it would be wrong, though the more radical pacifist will be so committed. Indeed, it is perhaps only in so far as moral judgements bear this counterfactual force that they can be of any real help as a guide to action; for even if we do not do something, we still wish to know whether it would have been better if we *had*.

The sense of necessity in which the radical pacifist wishes to maintain that it is necessary that any war is wrong I propose to call *normative*. I am inclined to think, as the term 'normative' suggests, that the same kind of necessity has application to other normative domains; but I shall bracket this question in what follows and simply focus on the moral case.

It is in this sense of necessity that the moral supervenes on the natural and, indeed, such cases provide the least contentious examples of normative necessity. Suppose that D is a complete description of the world in naturalistic terms. Then we will be inclined to make certain moral judgements about the world so described - that such and such a consequence was unfortunate or such and such an action wrong. But in so far as we are prepared to make such judgements, we will also be prepared to say that it was no accident that they are true. In those particular circumstances, the consequences *had* to be unfortunate, the action *had* to be wrong.

It is perhaps only because moral truths may hold with this kind of necessity that it is appropriate to talk of ourselves as being subject to moral *law*. For just as we are inclined to think that if one billiard ball hits another in given circumstances then the other *must* move, so we are inclined to think that if I make a promise to someone in given circumstances then I *must* keep the promise. And here the 'must' is not merely the 'must' of obligation. I am obliged to keep the promise, but that I am so obliged is something that is *required* by my having made the promise in the first place. The obligation is itself something that falls under the rubric of necessity.

How should normative necessity be understood? Is it a species of natural or metaphysical necessity? Or somehow definable in terms of these other forms of necessity?

It seems bizarre to suppose that normative necessity is a species of natural necessity. Indeed, it is commonly held that there are no natural necessities that essentially involve normative concepts. But from this we would hardly wish to conclude that there are no nontrivial normative necessities.

Whether normative necessity is a species of metaphysical necessity is more contentious. One reason for thinking that it is derives from the traditional doctrine of naturalism, according to which any moral property will be coextensive, as a

matter of conceptual necessity, with some natural property.[23] In order to see how the argument from the one to the other might go, let us suppose that a given proposition *P*, say that lying is wrong, is a normative necessity. This may be symbolized as follows:

(1) ([n]P(W)),

with the predicate 'W' for 'wrong' made explicit. Given naturalism, it is a conceptual necessity that wrongness is coextensive with a certain natural property *N*:

(2) ([c](x)(Wx ↔ Nx)).

Let us use the notion of normative necessity in an inclusive sense so as to include all of the conceptual necessities. Or, to put the matter differently, we shall not allow something to be a normative possibility unless it is also a conceptual possibility. It then follows from (2) that wrongness and the natural property *N* are coextensive as a matter of normative necessity:

(3) ([n](x)(Wx ↔ Nx)).

Since this is so, one may be substituted for the other in (1), and we obtain that it is a normative necessity that lying has the naturalistic property *N*:

(4) ([n]P(N)).

But that lying has the property N is a purely naturalistic proposition and so, given that it is a normative necessity, it must also be a conceptual necessity; for normative necessity merely serves to restrict the *connection* between the naturalistic and the normative possibilities, it does not serve to restrict the naturalistic possibilities themselves. So:

(5) [c]P(N).

But again given, by(2), that *W* and *N* are coextensive as a matter of conceptual necessity, one may be substituted for the other in (5); and we obtain that it is a a conceptual necessity that lying is wrong:

(6) [c]P(W)).

In this way, any normative necessity can be shown to be a conceptual necessity (and hence also to be a metaphysical necessity under the traditional view).

The argument rests on two general assumptions. The first, which we may call *Inclusion*, is that every conceptual necessity is a normative necessity. Or in schematic form:

(Inc) [c]A → [n]A.

The second, which we may call *Conservativity*, is that every naturalistic normative necessity is a conceptual necessity:

(Cons) [n]A → [c]A, for A naturalistic.

If these assumptions are themselves taken to hold of conceptual

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[23] The traditional form of naturalism is to be distinguished from the more contemporary form, in which all that is required is that the moral 'supervene' on the moral. Under certain assumptions, which need not be subject to doubt in the present context, the two will be equivalent.

necessity, then it may be shown to be a conceptual necessity that any given normative necessity is a conceptual necessity.

Ever since Moore, however, most moral philosophers have taken naturalism in its traditional form to be an instance of the 'naturalistic fallacy'; and if, as I think, they are right, then the present route to subsuming the normative notion of necessity under the conceptual notion will be blocked. This is not the place to attempt a vindication of this objection to naturalism, but let me make a few comments on how I think it might best be understood. Moore thought that if there were an analysis of an ethical property in terms of a naturalistic property, then it would no longer be an open question whether things with the naturalistic property had the ethical property. But as has often been pointed out, it may not be obvious that a correct analysis is indeed correct and so such an analysis could still leave open the question of the connection between analysandum and analysans.

Perhaps a more satisfactory way to formulate the objection is as follows.[24] If there is a correct analysis of *good*, say, as what promotes pleasure over pain, then something's being good must consist *in nothing more* than its promoting pleasure over pain.[25] But we have a strong intuition that it *does* consist in something more. Here we are not relying on the purported *epistemic* status of a correct analysis, as with Moore, but on its *metaphysical* consequences.

This argument, moreover, can be strengthened. For suppose one merely takes it to be a conceptual necessity that something is good if it promotes pleasure over pain. Now if this is true, then presumably it must also be true that something is good *in virtue of* promoting pleasure over pain. Indeed, it is only because something is good in virtue of promoting pleasure over pain that there is the conceptual connection between the one and the other. But now what is this in-virtue-of relationship that accounts for the conceptual connection? The only possible answer, it seems, is that it is the relationship of one thing *consisting in no more than* some other; for this would appear to be the only in-virtue-of relationship capable of sustaining a

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[24] A rather different way to obtain a version of the open question argument is to 'reverse' the argument given above. For suppose we reject the conclusion of the argument, i.e. take it to be a conceptual possibility that something holds of normative necessity though not of conceptual necessity. Then granted the conceptual necessity of the assumptions (Inc) and (Cons), it follows that (2), the doctrine of naturalism, will be false. This also strikes me as being a powerful objection to naturalism.

[25] The notion of *consists in*, which I appeal to at various places in the paper, is discussed at greater length in Fine [01].

conceptual connection. But if this is right, then the argument can also be taken to apply to statements of conceptual implication, and not merely to analyses.

§5 Normative Necessity: Neo-naturalism

Many recent philosophers have been willing to grant that normative necessity is not a form of conceptual necessity but have been tempted, all the same, by the view that it is a form of metaphysical necessity[26]. This alternative view does not appear to have been based upon any serious consideration of the matter. It is observed that there is a necessary connection between the naturalistic and the normative features of a given situation and it is simply assumed, given that the connection is not conceptual, that it must be metaphysical. These philosophers sometimes appeal to the fact that the connection holds in all possible worlds but it is only if these worlds are themselves taken to be metaphysically possible that the metaphysical necessity of the connection would thereby be established. No insight into the status of the necessary connection is to be gained in this, or any other, case by an appeal to possible worlds.

If metaphysical necessity is taken to be that form of necessity that derives from the nature of things, then it is prima facie highly implausible that the necessary connection between the naturalistic and normative features of a given situation should be taken to be metaphysical. For there would appear to be nothing in the identity of the naturalistic or normative features that demands that they be connected in the way they are. It is no part of what it is to be pain that it should be bad and no part of what it is to be bad that it should include pain. There is a striking and intuitive difference between the connection between being water and being composed of H_2O, on the one hand, and the connection between being being a pain and bad, on the other. For the identities of the respective features require that the connection holds in the one case, though not the other. I might also note that our previous argument against normative necessity as a form of conceptual necessity would appear to work equally well against its being a form of metaphysical necessity, since it is hard to see how a metaphysically necessary connection between the naturalistic and the normative could hold without the latter simply consisting in the former.

There is, however, a way in which this line of reasoning might be resisted. For it might be maintained that the normative features may have a 'hidden' nature and that, once it becomes clear what this is, it will be apparent how these features may be connected, as a matter of metaphysical

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[26] Their number includes Dreier J.,[92], p. 15, Klagge J.,[84], p. 378, McFetridge I.,[85], pp. 251-2, Shoemaker S.,[85], p. 441, and Zangwill N., [95].

necessity, with appropriate naturalistic features. The elaboration of such a view is to be found in the new 'metaphysical' version of naturalism. This differs from the old 'conceptual' version of naturalism in two main respects. First, the naturalistic property in terms of which 'good', or what have you, is analyzed is a high-level 'functional' property rather than a low-level 'criterial' property. Second, the extension of the term 'good' is taken to be 'fixed' by means of such a property. Thus an analysis of 'good' (one that is meant to reveal our understanding of the term) may be put in the following general form:

   (*) for any x, x is good iff x has the property that actually fits the good-making role.
We might suppose, for example, that for a property to fit the good-making role is for it to be what is valued under ideal conditions of valuation and that the property that actually fits this role is the property of promoting a balance of pleasure over pain. It would then be a metaphysical necessity that:

   (**) for any x, x is good iff x promotes a balance of pleasure over pain.
However, in contrast to traditional versions of naturalism, (**) would be a posteriori, since it would be an a posteriori matter that the property of promoting a balance of pleasure over pain is what is valued under ideal conditions of valuation.[27]

   An immediate consequence of this view is that it enables one to see normative necessity as a straightforward case of metaphysical necessity. For the normative necessities are merely those metaphysical necessities that arise from looking at the naturalistic content of the ethical predicates, without regard to how that content might have been fixed. Thus (**) above, the paradigm normative necessity from which all others follow, will also be a metaphysical necessity. The view is also able to preserve the distinction between the substantive criteria for goodness and what it is to be good; and it is not subject to our previous argument for the collapse of normative and conceptual necessity, for it is readily shown that the Inclusion Assumption should be given up. Indeed, if it were to hold, i.e., if each conceptual necessity were taken to be a normative necessity, then the Conservativity Assumption would fail.[28]

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[27] Wiggins ([87], p. 206), Lewis ([89], p. 132), Smith ([94], pp. 190-2), and Jackson ([98], p. 143) are among those who have been tempted by a view of this sort.

[28] Indeed, necessity will collapse to truth. For suppose that S is the case. Then it is a conceptual necessity that the actual truth-value of S is the truth-value of S and a metaphysical necesity that the actual truth-value of S is True. So if the two necessities could be combined, it would be necessary that the truth-value of S is True and hence necessary

However, I believe that the view is still open to serious objection.[29]   Even though it may be capable of yielding a better account of the metaphysics of morals than the traditional naturalist account, it is still not capable of yielding a satisfactory account of its epistemology. For it is unable properly to respect the non-empirical character of ethical belief.

In explaining what this is, there are two main problems that need to be addressed. The first is to say which ethical judgements should be taken to be non-empirical. The second is to say in what their non-empirical character should be taken to consist. It clearly will not do to say that *all* ethical judgements are non-empirical; for that Joey did something wrong yesterday is clearly an empirical judgement, since its truth rests upon the empirical naturalistic fact that he did one thing rather than another. We might attempt to preempt the relevance of empirical judgements in this way by making the ethical judgements in question conditional upon a complete description of the naturalistic facts. Thus an ethical judgement will now take the form: if this is how things are naturalistically (there follows a complete naturalistic description of how things might be), then this is how things are morally (there follows a partial account of how things should be). However, such a judgement might be true, not because the consequent is true but because the antecedent is false, and, in this case, there would be no reason to expect it to be non-empirical. In order to get round this problem, I propose that we consider instead the normative necessity of the above judgement. Thus the judgement is now of the form: it is (normatively) necessary that if this is how things are, then this would be good (say); or, to put it in counterfactual terms, if this is how things *were* then this *would* be good[30].   Call such judgements *world-bound normative conditionals*. Then one formulation of the claim that ethics is non-empirical is that every world-bound normative conditional should be non-empirical.

We must now say in what the non-empirical character of an ethical principle is to consist. One could adopt here a traditional characterization of the non-empirical, or a priori,

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that S.

[29] As will become clear, the objection is also likely to apply to versions of naturalism which insist on functionality without also insisting on rigidity.

[30] It may not be necessary to give a complete description of a world but merely one that is qualitatively complete. And, in this case, what we may have is not strictly speaking a conditional but a universal claim of the form $\forall x(Fx \supset Gx)$, where F is naturalistic and G normative. I shall not concern myself with such niceties in the text.

as what can be known independently of experience. But this makes the claim that world- bound judgements are non-empirical highly problematic, both because it is not altogether clear that we can arrive at *knowledge* of such judgements and also because it is not clear what epistemic role should be assigned to moral imagination and the like. I myself would not shrink from ascribing a strong form of aprioricity to ethical judgements. But in order not to prejudge the issue, I shall take the non-empirical character of ethics to consist in its conformity to what one might call *the criterion of perceptual independence*.

Let us use the term 'inner experience' to refer to experience which the subject does not take to be a case of veridical perception (we might also add the condition that the experience actually not be a case of veridical perception); and let us use the term 'outer experience' for any other kind of experience. The *criterion* for a judgement to be non-empirical is then:

the reasons one can have for making the judgement (or its negation) on the basis of inner experience are as good as any reasons one can have;
and the corresponding *principle* of perceptual independence for ethics is that:

the reasons one can have for judging a world-bound normative conditional to be true (or false) on the basis of inner experience are as good as any reasons one can have.[31]

The principle does not commit one to having some special kind of a priori access to ethical truth, since it is perfectly compatible with inner experience providing us with an empirical basis for our ethical beliefs. Thus it allows one to steer a middle course between embracing a strong form of empiricism for ethical enquiry, on the one hand, and a strong form of apriorism on the other. Nor does the principle require one to deny that outer experience could be helpful in the formation of the conditional judgements. It merely requires that, in such cases, the experience be dispensable - that whatever probative value it might have could always in principle be matched by the probative value of some inner experience. Thus someone who took himself to be a brain-in-a-vat (and perhaps is a brain-in-a-vat)

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[31] It might be argued that if every world-bound normative conditional is non-empirical then so is any normative necessity whatever. For let D_1, D_2, ... be an exhaustive list of all world-descriptions and suppose A is a normative necessity. Then:

(i) $[n](D_1 \text{ v } D_2 \text{ v } ...)$; and
(ii) $[n](D_i \supset A)$ for each world-description D_i.
Now $[n]A$ logically follows from (i) and (ii) and so, given that (i) and (ii) are non-empirical, it is plausible to suppose that $[n]A$ is also non-empirical.

However, the assumption that (i) is non-empirical is not entirely unproblematic. I am inclined to think it holds since I take normative necessity to coincide with conceptual necessity in its application to naturalistic statements. But on a view in which it is taken to coincide with metaphysical necessity, the assumption might be subject to doubt.

will be in as good an epistemic position to arrive at the judgements in question as a creature firmly ensconced in the real world.

Before applying the principle, it will help to clarify it further. In the first place, it should be clear that the principle is intended to apply to an ideal cognizer who is capable of grasping a complete descriptions of a world. This idealization is merely a device to factor out irrelevant empirical considerations and, in actual applications of the principle, could probably be weakened. For all that we require is that the antecedent of the conditional should incorporate anything that might be empirically relevant to the truth of consequent. We might be in position, for example, to say that there is something bad about a situation involving intense suffering, whatever other circumstances might prevail.

Second, even to grasp the concepts involved in the conditional judgement might require us to have certain outer experience.[32] Thus it should be taken for granted that the cognizer has had whatever outer experience is required in order to grasp the judgements in question. This means that our reformulation of the principle in terms of a brain-in-a-vat may not be altogether accurate, since we must assume that the brain-in-the-vat (perhaps in a previous 'embodied' existence) has had whatever outer experiences are required in order to grasp the relevant concepts.

Third, there are some reasons that are parasitic upon other reasons in the sense that their cogency wholly rests upon the cogency of those other reasons. Testimony is a clear case of what I have in mind; since the cogency of testimonial evidence rests upon the cogency of the reasons available to the person from whom the testimony was drawn. Now it is possible in cases of this sort that the parasitic reasons may have great probative value than the reasons upon which they depend. I may have good reason to believe some testimony, for example, even though the person providing the testimony has no good reason for saying what he does. Let us call a reason of this sort *unsustainable*. The principle should then be restricted to sustainable reasons, since it may not possible to match an unsustainable reason, obtained on the basis of outer experience, with a reason obtained on the basis of inner experience[33].

With these clarification in place, I hope it is clear that the principle is indeed plausible. For how might outer experience provide reasons for forming an ethical judgement?

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[32] I merely make this concession for the sake of argument. My own view is that the most basic ethical principles can be formulated in terms of concepts whose possession does not require any contact with the external world. Instead of talking of *human beings* for example, which appears to require such contact, we can talk of *moral agents* or *conscious beings*, which does not.

[33]It was an objection of Tony Martin's that made clear to me the need for a qualification of this sort.

One way is for it to inform me of the circumstances in which the moral concepts are to be applied. But this is irrelevant in the present case, since the relevant circumstances are already completely specified in the antecedent of the conditional. Another way is for it to make vivid to me *how* the concepts are to be applied in any given circumstance. It may be through seeing one person torture another, for example, that I learn to appreciate how awful torture is. But in so far as outer experience teaches me this lesson (without also informing me of the relevant circumstances), then it would appear to be irrelevant that the experience is, or is taken to be, veridical. Suppose, after what I take to be an experience of seeing one person torture another, I learn that the experience was not veridical. Does this make the moral lesson I take away from the experience any less worthy of consideration? Surely not. Surely what I learn from the experience is something that I could have learnt from a virtual form of the experience or even from a highly developed moral imagination[34]. Finally, a trusted moral authority might inform me that such and such an ethical judgement was correct. But in that case, given that my reason for trusting the authority is sustainable, I can simply take myself to have whatever reason the authority might have. If it is constituted by inner experience, all well and good; if it is not, then it can ('by induction') be replaced by whatever inner experience might serve in its place. It seems to me that these are essentially the only kinds of case that can arise; and so, granted that the adequacy of my responses, the principle is secure.

    Let us return to the neo-naturalist. There will be for him world-bound normative conditionals truths that are a posteriori. For whether a property P fits the good-making role is presumably a contingent (and a posteriori) matter. Indeed, if it were not, then the use of 'actually' in the formulation (*) of the position would be unnecessary and the view would collapse into a version of the traditional form of naturalism. Consider now a world-bound normative conditional, such as: necessarily, if this is how things are, then this is good. Then, in general, to determine whether this is true will require determining what property actually satisfies the good-making role.

    But the neo-naturalist now faces an intolerable dilemma. For consider his account of the good-making role. There are two possibilities: (i) it is egocentric in the sense of being indexed to the speaker; (ii) it is not egocentric - i.e. it is either indexed, though not simply to the speaker, or it is not indexed at all. The first case is illustrated by 'the property *I* would value (under ideal circumstances)', and the second two cases by 'the property *we* would value' and by 'the property *everyone* would value'. Now in any plausible version of the first option, there will be no genuine possibility of moral disagreement; for each of us, in talking about what is good,

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[34] It is partly for this reason that fiction can function so effectively as a substitute for experience in the development of moral sensibility.

will essentially be talking about ourselves. We might attempt to secure the possibility of moral disagreement by adopting the other option. But the non-empirical character of ethical judgement will then be lost. For whether a world-bound conditional holds will in general depend upon what in fact fits the good-making role; and this, in its turn, will depend upon how things are 'outside' of myself. But, in that case, it is hard to see why having a window on the world (or taking myself to have such a window) would not put me in a better position to determine whether the conditional it holds. Thus it appears that our neo-naturalist must either deny that there are genuine moral disagreements or must give up on the non-empirical character of ethical belief.

One might attempt to finesse this difficulty by taking the good-making role to be a question of our ideal valuational dispositions and yet taking it to be an a priori matter that we all have the same ideal dispositions. Thus it will be sufficient to ascertain my own dispositions (on the basis of inner experience) in order to ascertain them all. But the problem with this intermediate position is in seeing how it might be contingent that I have the ideal dispositions that I do and yet a priori that you have the same disposition as me. How can my other possible self be so different from you?

There is another version of neo-naturalism which appears to avoid these difficulties. It holds, in common with the previous version, that it is an a posteriori metaphysical necessity that goodness is (or coincides with) such and such a naturalistic property, but it denies that any specific good-making role is part of our understanding of the term 'good'. The reference of the term, on this view, is taken to be determined 'empirically' rather than 'conceptually'. It is given by causal or other such links between our use of the term and the real world - in much the same way, so it has been supposed, as the reference of natural kind terms, such as 'electron' or 'water'.[35]

This approach avoids the previous dilemma, since it no longer provides us with any descriptive content for the good-making role by which the dilemma might be stated. But it is still subject to a serious epistemological problem. For what is this mechanism for fixing reference, that both allows for genuine disagreement on matters of morality and yet respects the non-empirical character of moral belief, meant to be? How can the reference of the terms hook up to the real world and yet our justification for believing a substantive body ethical truths not require any access (or any substantive access) to that world?

On this point, the much vaunted analogy with natural kinds is of little help and actually stands in the way of seeing what the mechanism might be. For our beliefs concerning natural kinds are not in general independent of perceptual experience. If we were to learn that most of our perceptual experience was nonveridical, then little would be left of our knowledge of

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[35] Sturgeon [84], Boyd [88], Brink [89] and Railton [86] adopt a view of this sort.

natural kinds. The brain-in-the-vat is at a severe epistemic disadvantage in coming to any form of scientific knowledge; and if there really were an analogy between our understanding of scientific and of ethical terms, then one would expect him to be at an equal disadvantage in the effort to acquire moral wisdom. It is for this reason that the continuity in moral and scientific inquiry so much stressed by such writers as Boyd ([88], p. 123-124) and Railton ([86] p. 138) appears entirely misplaced. A much better analogy is with our understanding of mathematical terms; and in this case, of course, the idea of a hook-up with the real world is far less plausible.

I conclude that naturalism, in either its traditional or contemporary versions, is unable to rescue the doctrine that normative necessity is a species of conceptual or metaphysical necessity. There remains the possibility, of course, that normative necessity might somehow be definable in terms of another form of necessity; and two proposals along these lines may briefly be considered. One is that a normative necessity should be taken to be a normative (or moral) proposition that is true in all possible circumstances, where the circumstances are given in entirely naturalistic terms so that there is no danger that the form of possibility by which they are qualified is moral.   The error in this suggestion is that if the circumstances are taken to be naturalistic, then the idea of a moral proposition's being true *in* such a circumstance, i.e. of there being a necessary connection between the circumstance and the truth of the proposition, presupposes the very notion of necessity in question.

The second proposal is that normative necessity be taken to be a form of relative necessity. We specify the moral laws without appeal to the notion of normative necessity and then define a normative necessity to be whatever is entailed by the moral laws. But it is not altogether clear how we might define the moral laws without appeal to the notion of normative necessity and the view is subject, in any case, to the difficulty that it trivializes the form of necessity possessed by the moral laws themselves.

The notion of normative necessity would therefore appear to constitute yet another basic form of necessity.[36]

§6 Modal Pluralism
There remains another possibility for defining the notions of metaphysical, natural and normative necessity. For perhaps one or other of these notions can be defined as the restriction of a more comprehensive notion of necessity. Indeed, if each could be defined as the restriction of the most comprehensive notion of necessity, then modal monism could be saved.

Perhaps the most plausible suggestion of this sort is that metaphysical necessity be defined as a restriction of the

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[36] As far as I know, Moore ([22], p. 275) was the first to suggest that there might be a distinctive form of normative necessity, in his marvelous paper 'The Conception of Intrinsic Value'.

(inclusive) notion of natural necessity. In this case, there is arguably no difficulty in stating the relevant restriction in nonmodal terms. For the metaphysical necessities can be taken to be those natural necessities that are essential truths. This definition is reminiscent of the earlier proposal that metaphysical necessity be defined as essentialist truth, but it does not suffer from the same difficulty over modal force, since modal force is now included in the requirement that the essentialist truth should be a natural necessity.

There is, however, a related difficulty. For we do not thereby appear to capture the *relevant* modal force. There appears to be an intuitive difference to the kind of necessity attaching to metaphysical and natural necessities (granted that some natural necessities are not metaphysical). The former is somehow 'harder' or 'stricter' than the latter.[37] If we were to suppose that a God were capable of breaking necessary connections, then it would take more of a God to break a connection that was metaphysically necessary than one that was naturally necessary. It would be harder, for example, to break the connection between the truth of P&Q and the truth of P than the connection between cause and effect. It is also because of this difference in strictness that it is so much more plausible to think of the natural necessities as already including the metaphysical necessities than it is to think of the metaphysical necessities as already including the natural necessities.

It is difficult to say in more precise terms what this difference comes to. But one way to bring it out is in terms of the consequences of a proposition failing to be necessary. A proposition may fail to be metaphysically necessary even though it is naturally necessary. Perhaps it is a natural necessity that e causes f though not a metaphysical necessity. Now we are inclined to think in such a case that there exists a genuine possibility of the propositions's being false. On the other hand, if a proposition were a metaphysical necessity though not a natural necessity (in the narrow sense), then there would be no genuine possibility of its being false, since the 'hardness' of the metaphysical necessity would stand in the way.

I am inclined to think that the objections become more compelling when we consider the possibility that natural and normative or metaphysical and normative necessities might both be restrictions of a more comprehensive notion of necessity. For the character of the necessities seems even more strikingly different in these case and, in addition, there are difficulties in seeing how the relevant kind of restriction might be defined. It will not do to say, for example, that a normative necessity is a comprehensive necessity that essentially involves moral (or other normative) components. For under certain strange theological views, it may be a natural necessity and hence a comprehensive necessity that what in fact is the actual world is

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[37] It seems to be something like this that Kripke ([80], p. 99) has in mind when he talks of necessity 'in the highest degree'.

the best of all possible worlds. This is a comprehensive necessity that essentially involves a normative component yet it is not naturally taken to be a normative necessity, for normative necessity is not biased towards things going well, morally speaking, but merely going in the appropriate moral manner, good or bad, given how things are.

I conclude that there are three distinct sources of necessity - the identity of things, the natural order and the normative order - and that each gives rise to its own peculiar form of necessity. Neither form of necessity can be subsumed, defined or otherwise understood by reference to any other forms of necessity; and any other form of necessity, if my survey is complete, can be understood by reference to them. I have no a priori commitment to there being these three forms; but I must admit to finding some satisfaction in the thought that the three main areas of human thought - metaphysics, science and ethics - should each give rise to their own form of necessity.

There has been a tendency in recent discussions of modality to focus on the notion of metaphysical necessity just as earlier there had been a tendency to focus on the narrow notion of logical necessity. But it needs to be remembered that there are other forms of necessity, not intelligible in terms of these, that are equally important for philosophy and equally worthy of study. Philosophers like to think of themselves as having found the key to the universe. But where there are many locks, it should be recognized that we may have need of many keys.[38]

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