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Possibility and Conceivability: A Response-Dependent Account of Their Connections[1]

1. Introduction

In the history of modern philosophy systematic connections were assumed to hold between the modal concepts of logical possibility and necessity and the concept of conceivability. Descartes, Berkeley, and Hume, for example, all thought that conceivability was the mark of the possible. They assumed that it is permissible to draw conclusions about what is possible and necessary from premises about what is conceivable and what is not. In recent years, however, contemporary philosophers have repudiated this earlier tradition of linking the modal concepts with the concept of conceivability. (See Yablo 1993.)

In the eyes of many contemporary philosophers, insuperable objections face any attempt to analyse the modal concepts in terms of conceivability. For example, it is objected that the notion of conceivability cannot form an

adequate basis for an analysis of logical possibility: if it is identified with sensory imaginability, it is too narrow a notion to encompass all the logical possibilities and if it is identified with supposability, it is too broad a notion to select out only the logical possibilities. It is also objected that any analysis of possibility in terms of conceivability must be circular and so vacuous, since the concept of conceivability—as the concept of that which *can* be conceived   is itself a modal concept. Again, it is said that there are logical possibilities which cannot be conceived by any human subject so that the notion of conceivability to be equated with logical possibility has to be understood as idealised conceivability. But it is impossible, it is objected, to explain this idealised notion of conceivability without appealing to the modal concepts themselves.

These are, indeed, powerful objections to the project of reductive analysis, the project of analysing the modal concepts exhaustively in terms of non-modal concepts. However, it is important to keep in mind that a philosophical explanation of modality does not inevitably have to take the form of a reductive analysis. Recent work on response-dependent concepts (Johnston 1989, 1995; Wright 1992; Pettit 1991, 1992) offers a model of how to provide a non-reductive, philosophical explanation of a concept such as logical possibility in terms of a human response such as conceivability. The sort of response-dependent account I have in mind is one that attempts to explain a concept, not in terms of the conditions under which the concept is applied, but in terms of the conditions that are essential to possession of the concept. (See Peacocke 1992.) This sort of explanation does not purport to characterise a concept in terms of concepts available to possessors of the concept, but rather in terms of concepts available to a theoretician surveying the practices of those possessors.

In this paper I attempt to provide a response-dependent account of the modal concepts in terms of conceivability along the lines of the non-reductive model just adumbrated. Section 3 of the paper is devoted to sketching such an account. In section 4 I attempt to show that this kind of explanation of modality obviates many of the objections that have been brought against reductive analyses of the modal concepts in terms of conceivability.

Before turning to these matters, I consider the issue whether accounts of the modal concepts in terms of possible worlds are satisfactory. The essential feature of these accounts is that they analyse modal locutions in terms of quantification over possible worlds. In section 2 I examine one well worked-

out theory of possible worlds—that of David Lewis (1986a)—and argue that, whatever its other virtues, it fails in its aim of providing a reductive analysis of modality. This failure is symptomatic of the inadequacy of possible worlds analyses of modality in general. In view of the failure of these analyses, I argue that there is room left in the space of philosophical explanations for a non-reductive, response-dependent explanation of modality in terms of conceivability.

2. Possible Worlds Analyses of Modality

Possible worlds semantics have been remarkably successful in illuminating the logical properties of various modal locutions. For example, it clarifies the logic of the modal operators 'Possibly' and 'Necessarily' by taking them to be quantifiers over possible worlds. 'Possibly p' is analysed as 'At some possible world, p holds' and 'Necessarily p' is analysed as 'At every possible world, p holds'. Modal inferences are then explained by assimilation to the familiar patterns of quantificational reasoning. But is the quantification over possible worlds to be taken seriously?

Non-actualists about possible worlds answer this question affirmatively, arguing that the possible worlds quantified over are non-actual but real entities. The most famous exponent of non-actualism about possible worlds is, of course, David Lewis (1986a). His modal realism, as he calls his non-actualist position, states that reality consists of a plurality of worlds or universes. One of these worlds is what we ordinarily call *the* universe. The other worlds are things of the same kind: systems of objects, many of them concrete, connected by a network of external relations like the spatiotemporal relations that connect objects in our universe (pp. 74–6). Each world is isolated from the other worlds in the sense that there are no causal or spatiotemporal relations between constituents of different worlds (p. 78). The totality of worlds is closed under a principle of recombination which goes roughly: for any collection of objects from any number of worlds, there is a single world containing any number of duplicates of each, provided there is a spacetime large enough to hold them (pp. 87 90). Finally, Lewis holds that there are no arbitrary limits on the plenitude of worlds (p. 103).

Because of its ontological extravagance in other respects, it is easy to overlook the fact that Lewis's theory has, as one of its aims, the simplication of ontology by the elimination of modal facts. The reduction proposed by the theory proceeds in two stages. The first stage involves reducing modal

facts, in the manner already discussed, to quantified facts about worlds; the second stage of the reduction involves providing a systematic theory of these worlds. It is essential to the goal of reduction that the theory should characterise worlds in completely non-modal terms; if the theory is to effect a reduction of what *might be* to what *is*, it must characterise the worlds in terms which do not involve any circular appeal to modality. Does Lewis's theory manage to do this? Does it succeed in eliminating modal facts completely?

To answer these questions it is necessary to consider an aspect of Lewis's theory left undescribed to this point. As a way of introducing this aspect, it is important to observe that the theory of worlds, so far described, is compatible with actualism, as Rosen (1990) points out. An actualist could embrace the theory if, for example, he held the eccentric cosmological view that actuality consists of not just one universe, but a vast sea of 'island universes', all causally and spatiotemporally isolated from each other. To be sure, this hypothesis would not sit well with the spirit of ontological austerity that usually motivates actualism. But it would be a consistent view. And it would be a consistent view precisely because Lewis's theory of worlds does not ascribe any modal properties to the worlds, and so does not exclude the actualist construal of their existence and nature.

Something must be added to Lewis's characterisation of worlds to exclude the actualist interpretation. Intuitively, what is needed is a supplementation that makes it clear that the universes are possible worlds that are genuine alternatives to the actual one, not just parts of the actual world. So, if it is stipulated that the universe of which we are part is the *actual* world and the rest of the universes in the plurality are *merely possible* worlds, that will exclude the actualist construal. The theory will then imply something that no actualist could accept: viz. that some things—the possible worlds and their occupants—exist but are not actual.

It would seem to be a consequence of this supplementation, however, that the theory of possible worlds loses its claim to modal innocence. Does not the fact that it makes essential use of the concepts of the *actual* world and the merely *possible* worlds mean that it forfeits its claim to be a reductive account of modality? These consequences do not, however, follow if the concepts of the actual world and the merely possible worlds can be defined in non-modal terms. And this is where the undescribed aspect of Lewis's theory comes in. For the theory does in fact offer non-modal definitions of

these concepts. Thus, Lewis defines the *actual* world to be the system of objects that are *our worldmates*, that are, in other words, *spatiotemporally connected to us*. The *merely possible* worlds are those systems of objects that are not actual. There are two notable features of these definitions. First, the definitions bear out Lewis's claim that 'actual' is a locative indexical and so relational in character: what is actual to us is merely possible to the inhabitants of a different world and what is actual to them is merely possible to us. Secondly, and more relevantly, the definitions proceed in terms of the nonmodal concept of worldmates, or objects spatiotemporally connected to each other, and so support the claims of the theory to provide a reductive account of modality.

But the question is whether these definitions are satisfactory. Even setting aside the issue of the indexicality of 'actual', one can see that the definitions imply some counterintuitive results. For one thing, they imply that if there were systems of objects spatiotemporally isolated from us, they would be possible worlds to us. But the actualist hypothesis of a plurality of 'island universes', spatiotemporally isolated from each other but all part of the actual world, seems coherent. Indeed, for all we know, this hypothesis might really be true of the actual world: for the general theory of relativity allows space-time of many different topologies, including ones with disconnected regions. In any case, Lewis (1992) himself allows that there could be a possible world containing regions which are almost isolated, regions which are connected by only a few wormholes. It does not take much, as Bigelow and Pargetter (1990, pp.189-92) point out, to get from this to the hypothesis that there could be a world consisting of completely isolated 'islands'. If, as seems likely, the existence of the wormholes in this possible world depends on what happens in the regions, then it would be true that if things were a little different in these regions, the wormholes would not exist, in which case we would then have a possible world containing completely isolated 'islands'.

The intuition that there could be a world of 'island universes' is quite powerful and hard to resist. Contrary to what Lewis says (1986a, pp.71-2), this is not a case of 'spoils to the victor'. How could Lewis modify his theory to handle it? He could simply posit as primitive the notion of an actual world and define the merely possible worlds accordingly. Or, in order to preserve his indexical account of 'actual' he might take the notion of worldmates as primitive, defining, as before, the actual world to be the system of objects that are our worldmates. Given such definitions, he could allow that

the 'island universes' could be worldmates with us in the actual world, even though they are spatiotemporally isolated from us. But it is important to recognise that this notion of worldmates is a barely disguised modal concept: to say that two objects are worldmates is simply to say that they are compossible. Consequently, in either case, Lewis's theory must adopt a modal primitive of some kind if it is to offer a satisfactory answer to this objection.

The utility of possible worlds semantics in philosophy does not depend on construing them in Lewis's non-actualist fashion. There are other conceptions of possible worlds which are equally serviceable in the semantics but belong to a family of actualist views Lewis has labelled *ersatz modal realism*. These conceptions of possible worlds are ontologically less extravagant than Lewis's modal realist conception. However, they also fail to provide successful reductions of modal concepts for much the same reason that Lewis's fails—they appeal at some point or other to primitive modal concepts. For reasons of space I shall not pursue this line of argument here.

In summary then: Lewis's attempt to eliminate modal facts from his ontology depends crucially on whether he can offer a non-modal characterisation of possible worlds. The theory of possible worlds he advances does in fact succeed in characterising them non-modally, but at the cost of employ - ing defective definitions of the actual and merely possible worlds, a fact brought out by the 'island universes' objection. To remedy the defects in the definitions Lewis must appeal to modal primitives at some point or other, either at the very beginning by positing primitive notions of actual and possible worlds, or in the characterisation of the actual world by positing a primitive worldmates relation. Whichever way he goes, it would appear that the invocation of modal primitives undermines the reductive ambitions of the theory.

Was it plausible in any case to think that one can eliminate modal facts from ontology; to think that one can derive modal conclusions—statements about what *might* be and *must* be—from non-modal premises—statements about what *is*? Echoing Hume's views on the fact value distinction, I would maintain that it is impossible to derive a *must* from an *is*. Modal concepts cannot be analysed exhaustively in terms of non-modal concepts: some modal concepts must be taken as primitive, so that the programme of eliminating modality from one's ontology is bound to be a fruitless philosophical enterprise.

If this is so, is there any point to the possible worlds paraphrases of modal claims? It is hard to deny that the paraphrases do represent genuine *a priori* truths; that, for example, 'Possibly *p*' is legitimately paraphrased as 'At some possible world, *p* holds'. However, I suggest that the correct way to read these paraphrases is not from right-to-left as explanations of modal discourse, but rather from left-to-right as explanations of possible worlds discourse. On this proposal, statements such as 'Possibly *p*' are taken to be basic, unanalysable expressions, and the possible worlds talk is to be construed as an ontologically harmless but colourful way of expressing these modal statements. A claim that there is a possible world in which *p* holds is to be read as a *façon de parler*, as a more vivid way of saying that it is possible that *p*. So read, possible worlds talk does not entail a commitment to the existence of a plurality of real or ersatz possible worlds. Rather such talk carries the same ontological commitments as straightforward modal claims; and in my view these commitments are to the modal facts—the facts about possibilities and necessities—that serve as their truthmakers.

Philosophers have been wary of this way of proceeding because it has seemed explanatorily unsatisfactory simply to posit primitive modal concepts and positively mystery-mongering to invoke a realm of primitive modal facts. But I shall attempt to show that these worries are misplaced. The postulation of primitive modal concepts does not mean that no further philosophical explanation can be given of them, nor does the invocation of primitive modal facts as truthmakers for modal claims necessarily entail a violation of actualism.

3. A Response-Dependent Explanation of Modality

As remarked earlier, there are systematic connections between the concepts of possibility and conceivability, connections that were recognised by most of the prominent figures in the history of philosophy. Exactly how are these connections to be understood? Can they furnish the basis of a philosophical understanding of the nature of the modal concepts?

I think they can. The connections between the concepts of possibility and conceivability point, in my view, to the response-dependent character of the modal concepts. To say that a concept is response-dependent is to say, roughly, that the concept implicates a human response in the manner of a secondary quality concept. More precisely, the concept of a property C is *response-dependent* just in case there is some response RC—sensory, affec-

tive, or cognitive   such that a biconditional of the following kind holds true
a priori: x is C if and only x is disposed to elicit response R_C in suitable sub-
jects in suitable conditions (Johnston 1989, 1995; Wright 1992). So, for
example, the concept of colour, under a traditional representation of it as a
secondary quality, is the paradigm of a response-dependent concept: for the
traditional representation takes it to be true *a priori* that x is red if and only
x is disposed to look red to a normal observer in normal conditions. I shall
argue that the modal concepts turn out to be response-dependent too, since
they conform to an appropriate modification of the definition. The impor-
tant point to note is that the biconditionals that mark out a concept as
response-dependent cannot be—and, invariably, are not taken to be—
reductive analyses of the concepts, for the reason that the right-hand side of
the biconditional employs the concept in question, or some cognate con-
cept.

   If the biconditionals do not represent reductive analyses, what purpose
do they serve? Two kinds of answer to this question can be distinguished.
One kind of answer (Johnston 1989, 1992) is that the biconditionals, despite
their circularity, are useful summaries of the interdependences between con-
cepts, in particular between concepts of things in the world and concepts of
subjective responses. On this approach, the biconditionals do not state the
application conditions for the response-dependent concepts (they cannot
because they refer to the concepts themselves); nonetheless they are entailed
by the application conditions of these concepts, taken in conjunction with
those of the other concepts mentioned in the biconditionals. Thus, anyone
who has a proper grasp of the concepts involved in the biconditional for the
colour red, say, will be in a position to recognise the truth of that bicondi-
tional; that is, anyone who knows the application conditions of 'red', 'is dis-
posed to look red', 'normal observer', 'normal conditions' will be in a
position to know *a priori* that something is red if and only if it is disposed to
look red to normal observers in normal conditions. Thus, a proper under-
standing of the application conditions of the concepts involved is sufficient
for an appreciation of the response-dependent character of the concept.

   The other kind of answer to the question about the purpose of the non-
reductive biconditionals (Pettit 1991, 1992) proceeds in terms of the posses-
sion conditions of concepts, rather than their application conditions or the
entailments thereof. (See Peacocke 1992 for the concept of possession con-
ditions.) The possession conditions for a concept are those aspects of the

practice of subjects possessing the concept that are essential to their competence with the concept. The possession conditions for the colour concepts, for instance, include the fact that ordinary subjects experience colour sensations, which form their primary criteria for applying colour concepts. They also include the fact that ordinary subjects do not always take colour sensations to be authoritative about colours and that they engage in corrective practices when intertemporal and interpersonal discrepancies arise, discounting some perceivers or perceptual conditions as abnormal. The response-dependent biconditionals governing the colour concepts, then, provide a summary of these possession conditions. Rather than offering an analysis of the concepts, they encapsulate in short-hand form the features of the response and of the corrective practices that are essential to competence in the concepts.

A significant feature of a response-dependent biconditional, according to this second answer, is that it is not necessarily accessible to the subjects whose conceptual competence is being explained: it is furnished by *us* in our role as *theorists* of their conceptual competence. Accordingly, the biconditional may be couched in terms of notions not possessed by the subjects themselves and may also present the response-dependent concept in a light that is unfamiliar to them. The response-dependent explanation of the colour concepts does not credit ordinary subjects with the concepts of 'normal observers' and 'normal conditions', nor does it impute a conception of colours as secondary qualities to ordinary subjects. In these respects, it differs from the account in terms of application conditions; and it is arguable that it is superior in these respects to that account. For it is plausible to think that ordinary subjects, untutored in philosophy or science, can possess an adequate mastery of the colour concepts without knowing what normal observers or conditions are, and without necessarily thinking of them as secondary qualities tied essentially to sensory experience. For these reasons this second kind of answer is, in my view, a much more plausible kind of explanation of the purpose of the non-reductive biconditionals.

Can a response-dependent explanation, parallel to that for the colour concepts, be given for the modal concepts? Can possession conditions be stated for the modal concepts of a kind with those stated for the colour concepts? The answer to these questions is 'Yes'. For the modal concepts have possession conditions that fit the pattern of the colour concepts' possession conditions: first, we experience a certain primitive response—that of con-

ceiving something to be the case—which forms our primary criterion for applying modal concepts; and secondly, we engage in corrective practices whereby we refine the responses that count as veridical indicators of modality. In the following I attempt to expand these brief remarks into a full response-dependent explanation of the modal concepts.˙

It is uncontroversial that the primary criterion we use in applying modal concepts to things is the imaginability or conceivability of those things. In everyday reasoning it is assumed that if something can be imagined or conceived to be the case, that is a reason for thinking that it is possible; and equally, if something cannot be conceived to be the case, that is a reason for thinking that it is impossible. These assumptions are also made in more sophisticated reasoning. For example, philosophers try to establish the possibility of some state of affairs by constructing detailed imaginary scenarios illustrating the phenomenon, and in doing so reveal their presupposition that the imaginability of the phenomenon indicates its possibility. In a similar fashion, physicists take their thought experiments to shed light on physical processes, which they could not do unless they pointed to the possibility of the processes in question.

A remark is called for here about the way imagination is to be understood. There is a way of thinking of the imagination that takes it be a quasi-sensory faculty (Hart 1976, 1988; Peacocke 1985). On this view, there are modes of imagination corresponding to the five senses: perhaps the olfactory, gustatory, and tactual dimensions are not well developed, but the visual and the auditory dimensions are. This view is often invoked to motivate an analogy: just as we arrive at our beliefs about the actual on the basis of sensory experience, so we arrive at our beliefs about the possible on the basis of sensory imagination. Nevertheless, this view about the nature of the imagination is mistaken: while the imagination certainly originates in the sensory, it is not necessarily restricted to it. There are many things which can imagined intellectually, but not sensorily. For example, one can imagine, but not visualise, that there is an additional primary colour, that space has an extra dimension, that particles are waves, that space-time has a shape (Blackburn 1986; Craig 1985). Sometimes, the term 'conceive' is used to encompass this kind of intellectual imagining, a usage that goes back at least to Descartes (Williams 1978). It is clearly imaginability in this broad sense of conceivability that must be taken to be criterial of possibility.

What exactly is conceivability? What does the mental ability to conceive something consist in? Some have denied that we have any such mental ability (Hart 1988, p.15). To be sure, if conceivability is to be criterial of possibility, conceiving something to be the case cannot be identified with supposing it to be the case: for one can entertain a supposition which is later proved to be impossible, as in *reductio ad absurdum* proofs. Nonetheless, there is, I maintain, an intimate link between conceiving and supposing. We usually take it to be a reason for thinking that some state of affairs is possible that we can suppose that the state of affairs holds and that we can do so without generating an absurdity or contradiction. Consider, for example, the way in which philosophers go about establishing the possibility of backwards causation or disembodied minds. Typically, they describe a scenario involving the existence of backwards causation or disembodied minds and then attempt to show that this scenario does not give rise to any contradiction. If they are successful in these attempts, that is taken to be warrant for believing in the possibility of backwards causation, disembodied minds, or whatever. This is a defeasible warrant, of course, because it may turn out on closer examination that the scenario in question does after all give rise to a contradiction. The point is, however, that our reflective habits of thinking, as evidenced by the practices of philosophers, is to take the fact that some state of affairs can be supposed to hold without absurdity as *prima facie* grounds for accepting the possibility of that state of affairs.

Under this construal, the mental ability to conceive of something is really a complex ability, consisting in the ability to suppose that the state of affairs holds without being able to reduce this supposition to absurdity. Clearly, this complex ability presupposes a number of other more basic abilities: first, the ability to entertain suppositions; and secondly, the ability to infer other propositions, in particular absurd propositions, from suppositions. Is it possible to possess these capacities independently of the possession of the modal concepts? This is an important question in the context of the response-dependent explanation of the modal concepts, because it assumes that acts of conceiving can stand as criteria for the modal concepts and so it presupposes that the abilities involved in acts of conceiving can be possessed independently of the possession of modal concepts. But is this the case? Is not the concept of an absurdity the concept of a proposition which *cannot* be true? And is not the concept of a valid inference the concept of a

transition from premises to conclusion such that the former *cannot* be true without the latter being true?

To be sure, the most natural explanations of the concepts of an absurd proposition and of a valid inference may appeal to modal concepts. But this by itself does not establish that subjects who can entertain suppositions and draw inferences from them must possess these concepts: these may be primitive capacities, or at least capacities that are possessed independently of any grasp of the concept of an absurd proposition or a valid inference. Indeed, there seems to be some reason to think that human subjects have the ability to entertain suppositions and to infer propositions from these suppositions before they acquire any modal concepts. The ability to suppose something to be the case is an ability children possess early in their conceptual development, as is evident from the way in which they engage in games of make-belief from an early age. For example, in make-believing that there are indians behind the bushes, a child is entertaining the kind of supposition that in sophisticated practices forms the basis of *reductio* arguments. Again, children possess early in their conceptual development the ability to make inferences from suppositions, as evident once more from the way in which they readily draw inferences in their games of make-believe. In reasoning, for example, that there must be at least two indians behind the bushes from the make-believe supposition that there is an indian behind each of two bushes, the child demonstrates in rudimentary form the kind of reasoning from suppositions that achieves its most elaborate and sophisticated form in mathematical proofs. There seems some reason to believe, then, that children can possess these abilities well before they acquire any modal concepts, or any concepts such as those of an absurd proposition or of a valid inference that are explained in terms of modal concepts.

As remarked above, conceivability is merely a defeasible criterion of possibility. In this respect conceiving something to be the case is like perceiving something to be coloured: just as we acknowledge the possibility of colour illusions, so we acknowledge the possibility of modal illusions, of things seeming to be conceivable when they are not and inconceivable when they are. Built into our practice is a recognition that conceivability is a defeasible criterion for real possibility in the same way that colour appearance is a defeasible criterion of real colour. That imaginability or conceivability is not always an accurate guide to possibility is a familiar point with many illustrations. One of the best is provided by Lewis:

We can imagine the impossible, provided we do not imagine it in perfect detail and all at once. We cannot imagine the possible in perfect detail and all at once, not if it is at all complicated. It is impossible to construct a regular polygon of nineteen sides with ruler and compass; it is possible but very complicated to construct one with seventeen sides. In whatever sense I can imagine the possible construction, I can imagine the impossible construction just as well. In both cases, I imagine a texture of arcs and lines with the polygon in the middle. I do not imagine it arc by arc and line by line, just as I don't imagine the speckled hen speckle by speckle—which is how I fail to notice.the impossibility. (1986a, p. 90)

The traditional way of dealing with such cases was to distinguish proper acts of conceiving from improper acts of conceiving. Descartes, Berkeley, and Hume were all clear that not just any old act of conceiving is relevant to determining modality, only those acts of conceiving involving clear and distinct ideas were to count. But surely the point of Lewis's example is that it is not possible to distinguish purely phenomenologically, in terms of the clarity and distinctness of the ideas involved, between the two kinds of imaginary constructions. To deal with modal illusions of this kind the response-dependent explanation of modality must look beyond the internal phenomenological character of the acts of conceiving. This is not surprising if it is to be anything like the response-dependent explanation of colour: for that explanation does not distinguish a non-veridical from a veridical colour sensation in terms of a phenomenological feature of the sensation, but rather in terms of some feature of the observer or the conditions. Similarly, it must be some feature of the conceiver or his circumstances which marks out a case as one of non-veridical conceiving.

In this regard, it is important to take into account the public character of our practice of justifying modal claims on the basis of acts of conceiving. In claiming that something is possible because we can conceive it to be the case, we are expected to be able to offer a recipe whereby others can also conceive it to be the case. If our practice did not have this requirement of publicity, the conceivable would be infected with extreme subjectivity so that what *seemed* conceivable would *actually* count as conceivable. To meet the requirement of public justification it may be necessary, at least in the cases of complicated claims of conceivability, to appeal to certain 'aids to the imagination'—such things as geometrical constructions, proofs, and computer simulations. These enable the mind to take in the fine details of a situation too complicated to imagine in a casual, unaided way. Consequently,

they play an essential role in the process of public justification, the process
of explaining to others how to conceive what we have conceived.

Interpreted in this light, Lewis's example simply points to the fact that
the unaided visual imagination sometimes has difficulty in distinguishing
the possible from the impossible. Perhaps an attempt to visualise the con-
struction of a nineteen-sided regular polygon produces much the same
impressions as an attempt to visualise the construction of a seventeen-sided
one. But that does not establish that these cases are the same with respect to
conceivability. A geometer who tried to demonstrate the constructibility of
these figures would soon recognise the difference between the cases. She
would discover that the methods she used to construct a regular polygon
with seventeen sides failed, or were frustrated, in the construction of one
with nineteen sides. The lesson this points to is that the kind of act of con-
ceiving that is a true indicator of possibility is not the casual, off-hand act of
visual imagination, but the careful, attentive act of conceiving that can be
given a public justification.

Under what circumstances do our corrective practices discount acts of
conceiving as not being veridical indicators of possibility? The answer is
simple: when they suffer from one kind of cognitive limitation or another.
In Lewis's example, the act of conceiving the construction of a nineteen-
sided regular polygon is discounted because it is based on inadequate rea-
soning: in particular, it is not based on the kind of reasoning required of a
publicly justified demonstration of the constructibility of such a figure.
There are, of course, many other kinds of limitation recognised in our prac-
tice—limitations due to inadequate critical reflection, limitations due to
lack of concentration and attention, limitations due to external interference,
limitations due to insufficient memory, and so on. The list is open-ended, as
there is a potentially infinite number of kinds of cognitive incapacities or
deficiencies which our practice regards as discounting factors. It is impor-
tant to observe in this connection that it is not necessary to explain why
these limitations are discounted by adverting to modal considerations. It is
not that one justifies the preference for acts of conceiving based on critical
reflection, say, on the grounds that they are more reliable guides to modal
reality. The justification can proceed simply in terms of the fact that a per-
son who has critically reflected on some supposition possesses information
and abilities possessed by a person who has not critically reflected on it *and
more besides*. As a person critically reflects more and more on some imagi-

nary supposition, she thinks of more inferential strategies to probe the sup-
position for inconsistencies; she notices more relationships of coherence or
incoherence between different parts of supposition; she comes to possess
greater insight into the complexities of the supposition. In some cases the
reverse may happen. But, by and large, the process of increasing critical
reflection goes hand-in-hand with increasing powers of conceiving.

A number of kinds of limitations that can affect a person's powers of
conceiving have been discussed. They have been characterised by way of
their role in our corrective practices: they are those limitations registered in
our corrective practice as sufficient grounds for discounting an act of con-
ceiving. The possibility of this description permits the introduction of the
theoretical concept of *an ideal conceiver*. Let us call a subject who does not
suffer any of the limitations recognised in our practice as discounting acts of
conceiving *an ideal conceiver*. The concept of ideal conceiver allows for the
precise formulation of the connection between conceivability and possibil-
ity. As we have seen, not any old kind of conceivability is taken to be suffi-
cient and necessary for possibility. Even when one can conceive something
to be the case and can give instructions others can follow to duplicate one's
experience, that does not establish conclusively the possibility of the thing in
question. It could be that there is some flaw in one's conceiving that is con-
cealed from everyone. Conversely, one's failure to conceive of something
does not constitute a conclusive reason for its impossibility, for one's failure
could simply be due to some limitation in one's powers of conceiving. It is a
coherent supposition that there could be a possibility so complicated and
involved that it is beyond the powers of any actual person to envisage it in
actual conditions. But we need not entertain these reservations about the
powers of an ideal conceiver: since the powers of this being do not suffer any
of the limitations discounted by our practice, we can take the conceivings of
this being to limn the boundaries between the possible and impossible.

These reflections suggest a response-dependent biconditional of the fol-
lowing kind for the concept of possibility: it is possible that p if and only if
an ideal conceiver could conceive that p. In keeping with the fact that neces-
sity is the dual of possibility, the following biconditional for the concept of
necessity suggests itself: it is necessary that p if and only if an ideal conceiver
could not conceive that not-p.

It needs emphasising that these biconditionals are not supposed to state
the application conditions of the concepts of possibility and necessity.

Rather their point is to encapsulate the possession conditions of these concepts—those features of our practice that we take to be essential conditions of competent possession of the concepts. Thus, one possession condition is that conceivability is a criterion of possibility; and another possession condition is that this criterion is defeated in cases where the conceiver suffers some limitation of cognitive powers—a limitation of reasoning, of memory, of attention, or what-have-you. With the introduction of the notion of an ideal conceiver, the possession conditions can be encapsulated in the form of biconditionals. These biconditionals cannot be read as stating application conditions of the modal concepts, if only because they appeal to the notion of an ideal conceiver, a notion unfamiliar to most participants in modal discourse. Still, the truth of the biconditionals can be recognised by us in our role as theorists about modal discourse, even if not by ordinary participants in that discourse. Indeed, anyone who has followed the response-dependent explanation of the possession conditions of the modal concepts—and in particular the explanation of an ideal conceiver—should be able to see that the biconditionals are *a priori* truths; and so that the modal concepts are proper response-dependent concepts.

This characterisation of the biconditionals helps to clarify some of their features. One feature that requires further discussion is their use of the modal 'could': the biconditionals link the modal concepts, not just with what an ideal conceiver *actually* conceives, but with what such a being *could* conceive. If these biconditionals were intended to state reductive analyses of the modal concepts, this feature would count against them because of the vicious circularity it would induce. But as I have said, the biconditionals are intended to state possession conditions rather than application conditions. In this guise, it is entirely in order for them to employ the modal concepts of disposition and ability to articulate the relevant possession conditions. There is no circularity here since the modal talk of disposition and ability takes place at the level of the response-dependent explanation—the meta-level, so to speak, from which we survey our first-order practices with modal concepts. Certainly, at this theoretical level we must be able to understand the modal talk of disposition and ability in order to formulate the response-dependent explanation. But that does not mean that we have to presuppose what is to be explained, since what is to be explained are our practices, *qua* participants in ordinary modal discourse, not *qua* theoreticians about this discourse.

4. Some Common Objections Answered

As remarked earlier, few contemporary philosophers endorse the early tradition in the history of modern philosophy of linking the modal concepts with the concept of conceivability. So the present response-dependent explanation of the modal concepts is bound to provoke many objections. In this section I consider just three objections against the account that will appear to be the most pressing to contemporary philosophers.

First Objection. The response-dependent biconditionals advanced for the modal concepts are trivial. The notion of an 'ideal conceiver' can be specified only in the 'whatever-it-takes' way (Wright 1992). For an ideal conceiver can only be characterised as that kind of being, whatever it may be, that is able to conceive all and only the possibilities. Clearly, on this understanding, the biconditionals may be *a priori* true, but they are also completely uninformative.

In response to this objection, I wish to maintain that the theoretical stance adopted in the present response-dependent explanation allows for a substantial definition of the notion of an ideal conceiver. (For the general point see Pettit 1991.) The notion was introduced by describing our practices of discounting the conceivings of some subjects on the grounds of their limitations; and an ideal conceiver was defined in a higher-level way as that kind of conceiver that does not suffer from any of the discounted limitations. To be sure, this definition does not specify the discounted limitations individually: it cannot do this in any case since they are open-ended. But it does specify them independently of any connection with modality, and it is this fact that establishes that the definition is not a 'whatever-it-takes' definition. Correspondingly, it can be seen that the biconditionals, framed in terms of an ideal conceiver, are substantial ones. The biconditional for possibility, for example, does not say that something is possible if and only if it is conceivable by some subject who can conceive all and only the possibilities. Rather it says that something is possible if and only if it is conceivable by someone recognised to be ideal by our practices of correction.

Second Objection. The theory, proceeding as it does in terms of an ideal conceiver, faces an epistemological problem as serious as that facing Lewis's modal realism. Lewis's epistemological problem is the problem of explaining how the canonical kinds of evidence for modal claims---evidence in the form of acts of conceiving—can bear on modal claims, when these claims

are construed to be about causally inaccessible possible worlds. The epistemological problem facing this response-dependent account is the problem of explaining how our ordinary modal claims are ever justified, given that these claims are tied to what an ideal conceiver can conceive. Since we are never in ideal conditions, or at least could never know that we were, how do we ever come by justified modal beliefs?

It is indeed true that we can never be certain that we are in ideal conditions: no matter how hard we try to overcome of our cognitive limitations, we can never be certain that we have succeeded. All the same, in many cases we can be reasonably confident that we are in conditions that are close to ideal, or close enough for the purposes at hand. For example, suppose you carry out a simple thought experiment in which you suppose that you pursued a different career; and on the basis of this thought experiment, you arrive at the conclusion that it is possible that you pursued a different career. You can be reasonably confident of your modal conclusion in a case like this, because you can be reasonably confident that you do not have any of the limitations that would discredit a claim to have successfully conceived this situation. For example, you can be assured that your inferential skills are adequate to the task of detecting any inconsistency in such a simple imaginary scenario. The other idealisations that are called for in other kinds of thought experiment are not relevant to this case and so can be safely ignored. Your confidence in the modal conclusion would be reinforced if increasing critical reflection on the imagined scenario continued to issue in the verdict that it does not generate any absurdity. It would also be reinforced if you were able to set out instructions whereby others could carry out the same thought experiment and also conclude that it does not give rise to absurdity.

Moreover, in contrast to Lewis's modal realism, the present account can provide a plausible explanation of the internal connection that exists between acts of the conceiving and beliefs about modality. It is generally agreed that the canonical method for finding out whether some state of affairs p is possible is to conduct a thought experiment. On the present account, success in carrying out the thought experiment constitutes *prima facie* evidence for the possibility of p. Of course, it will be fallible evidence, but, subject to reconsideration in the light of new evidence, it will be enough to be going on with. So it will be reasonable to believe that it is possible that p. The story that Lewis gives is very similar, except that he interpo-

lates a step in the middle. He says that success in carrying out the thought experiment that envisages p is *prima facie* evidence that p holds in some causally inaccessible possible world so that it will be reasonable to believe that p is possible. But what is the justification for this intermediate step? It is a complete mystery why one's acts of conceiving should be taken to be a guide to the domain of causally inaccessible objects.

Third Objection. Kripke (1980) has shown that some sentences describing contingent truths are *a priori* and so cannot be conceived to be false. For example, suppose that the reference of the term 'metre' is fixed by the description 'the length of the stick S'. Then the sentence 'The stick S is one metre long' can be known *a priori* to be true and so cannot be conceived to be false. Yet the sentence records a contingent fact: the stick S might have had a different length if it had been heated, say. Kripke's example shows, then, that it is not permissible to equate possibility with conceivability. Kripke has also shown the converse: that it is not permissible to equate impossibility with inconceivability. For he has shown that some sentences recording impossible states of affairs are *a posteriori* and so can be conceived to be true. For example, the sentence 'Water is not H$_2$O' represents an impossible state of affairs and yet, in virtue of its *a posteriori* nature, can be conceived to be true.

This objection raises the issue: what kind of knowledge do we hold fixed in our acts of supposing? The objection presupposes that in trying to conceive some state of affairs—in entertaining the supposition that the state of affairs obtains—we are allowed to hold fixed only *a priori* truths. If this were so, it would follow that the falsehood of any *a priori* truth, even a contingent one, would be inconceivable and the truth of any *a posteriori* falsehood, even an impossible one, would be conceivable. These consequences would certainly confound any attempt to identify the possible with the conceivable and the impossible with the inconceivable.

It is false, however, that the only kind of knowledge that we hold fixed in entertaining suppositions is *a priori* knowledge. We can see this by considering the way in which our acts of supposing seem to be governed by a certain principle of thought. In entertaining suppositions about imaginary situations, we suspend many of the constraints of actuality, but not all of them. In particular, we do not suspend constraints to do with the identity of the individuals and properties that enter into the imagined situations. An important principle governing the mental activity of entertaining supposi-

tions—I call it the *fixity principle*—is this: in supposing some imaginary scenario obtains, we hold fixed the identity of the constitutive objects, properties, and relations as far as they are know to us. For example, in conceiving whether there could be a talking donkey we hold fixed the properties of talking and being a donkey, as they are known to us, and ask whether they can be combined together in imaginative thought. On the basis of a commonsense understanding of them, it is reasonable to conclude that they can be combined together in the imagination.

The fact that our activity of entertaining suppositions is governed by the fixity principle explains several Kripkean observations about modality. One is Kripke's observation that transworld identity is stipulational in character—a thesis he uses to motivate his famous claim that proper names are rigid designators (1980). In criticising the opposing view, according to which transworld identity is established on the basis of qualitative similarities between individuals in different worlds, Kripke writes:

> Why can't it be part of the *description* of a possible world that it contains *Nixon* and that in that world *Nixon* didn't win the election?... 'Possible worlds' are *stipulated*, not *discovered* by powerful telescopes. There is no reason why we cannot stipulate that, in talking about what would have happened to Nixon in a certain counterfactual situation, we are talking about what would have happened to *him*. (1980, p. 44)

While Kripke talks in these passages of stipulating possible worlds, what is really being stipulated are the identities of the individuals, properties, and relations as they occur in counterfactual worlds or situations. He claims that, in talking about what would be true of certain actual objects or properties in counterfactual worlds, we simply stipulate that we are talking about the very same individuals and properties, not some qualitative counterparts. Kripke does not offer an explanation of this feature of our modal discourse; he simply presents it as an obvious datum. However, this datum is explained very naturally by the fixity principle, taken in conjunction with the proposed account of modality. For they imply that, in evaluating what would be true of some actual individual or property in a counterfactual situation, we hold fixed the identity of that individual or property and try to conceive what would hold true of it in the new scenario. The stipulational character of transworld identities follows straightforwardly from the fixity principle.

The other observation of Kripke's which the fixity principle illuminates is his observation, noted in the objection, that the distinction between nec-

essary and contingent truths does not coincide with, but crosscuts, the distinction between truths known *a priori* and truths known *a posteriori* . Kripke argues that the distinction between necessary and contingent truths is a metaphysical distinction to do with whether things could have been dif ferent from the way they are, whereas the distinction between truths known *a priori* and those known *a posteriori* is an epistemic distinction to do with how knowledge of the truths is arrived at. He gives convincing examples of necessary truths that are known *a posteriori* and contingent truths that are known *a priori*.

Consider the way in which the fixity principle explains some of Kripke's examples of necessary *a posteriori* truths and contingent *a priori* truths. Given the fixity principle, it turns out, on the proposed account, to be necessary that water is H_2O because anyone who knew the identity of the property variously called 'water' and 'H_2O', and held it fixed in his acts of conceiving could not suppose that water is not H_2O without generating an absurdity. Nonetheless, knowledge of this truth's necessity is *a posteriori*, relying as it does on empirical findings about the identity of the property variously called 'water' and 'H_2O'. It also turns out, on the proposed account, to be contingent that the standard metre stick S is one metre long, even though the sentence 'The stick S is one metre long' can be known to be true *a priori*. This truth is merely contingent because a person, holding fixed the identity of the stick and the property of being one metre long, could consistently suppose the stick to lack the property—the stick might, after all, have had a different length if it had been heated. Nevertheless, the assumption that the reference of 'meter' is fixed by the description 'the length of the stick S' means that the truth of the sentence 'The stick S is one metre long' can be known *a priori* without investigation of the world.

5. Conclusion

In this paper I have sought to argue that, contrary to the common opinion of contemporary philosophers, it is possible to explain the modal concepts in terms of the concept of conceivability. To substantiate this claim it has been necessary to introduce some new ideas. First, it has been necessary to provide a new model of conceiving, a model that explains it, not in terms of the mental activity of sensorily imagining something, but in terms of the mental activity of entertaining a supposition that does not generate an absurdity. Secondly, it has been necessary to introduce a new kind of

explanation—a response-dependent explanation. This kind of explanation does not state application conditions for the modal concepts of the sort required by a reductive analysis, but rather states the possession conditions for the concepts. The response-dependent explanation takes off from the idea that our modal concepts ultimately derive from the human response of conceiving or imagining something to be the case. It refines this idea into a response-dependent biconditional linking the modal concepts with the acts of the kind of conceiver recognised to be ideal by our practices of correction. When formulated in this way, the response-dependent explanation of the modal concepts sheds considerable light on modality (especially by way of the fixity principle) and obviates some of the standard objections to linking possibility with conceivability.

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