MODALITY AND ANTI-METAPHYSICS

Modality and Anti-Metaphysics

STEPHEN K. McLEOD
University of Glasgow
The Open University in Scotland

Contents

Preface

This book has two principal aims. Firstly, it aims to defend metaphysics, chiefly against the logical positivists. Secondly, it aims to defend objective non-logical necessity and possibility against empiricist views which hold that the very notions are unintelligible and which reject the view that there is ontologically grounded modality. As an adjunct, I defend a conception of the tasks of ontology against the objectual conception adopted in some contemporary discussions.

Chapter 1 concerns philosophies which have been thought to seek the elimination of metaphysics. I argue that the common view that Hume considered all metaphysics meaningless and sought its elimination is the misguided result of the positivist appropriation of Hume. I suggest that Carnap's revisionary view of meaning, in accordance with his notion of logical syntax, poses no serious threat to metaphysics. I set out the logical problems associated with Ayer's notion of indirect verifiability and the well-beaten dispute about the status of the verification principle itself. I indicate my intention to study the modality involved in verifiability and my view that, setting aside the aforementioned logical problems, the classification of cognitively meaningful statements as either analytic or empirical is inadequate. I discuss a modal argument against metaphysics offered by N.R. Hanson, my criticism of which serves to illustrate a broad form of essentialist argument, common to much essentialist work, which might justifiably be attributed to Wittgenstein's *Tractatus*. Given the case for saying that the *Tractatus* is in fact committed to realism about a (very restricted) class of modality *de re*, it should not be regarded as anti-metaphysical in the manner of the positivists. I suggest that: Wittgenstein's attitude to metaphysics was more subtle and more tolerant than that of the positivists; contrary to the views of some commentators, his *Philosophical Investigations* neither establishes nor seeks to establish anti-essentialism.

In Chapter 2, informed by developments in contemporary anti-realism (with which I am not allied), I set out my argument so that the initial issue is not that of realism/anti-realism about modality, but that of primitivism/anti-primitivism. I argue that modal discourse is primitive, i.e. neither eliminable nor reducible to non-modal discourse. I endorse a strict distinction between eliminativism and reductionism. After McGinn, I outline epistemological motivations behind such anti-realist positions. In order to assuage these I provide some modal epistemology. I adopt a broadly Kripkean account of *de re* modal knowledge while disputing the famous Kripkean tenet that there are necessary truths typically discoverable *a posteriori*. I take it, after Wiggins, that it rests upon a misconception about the form of essentialistic attributions. I illustrate the distinction between necessary truths and true statements of *de re* necessity using the necessity of identity as a key example. I try to improve on the epistemology

offered by Kripke and largely subscribed to by McGinn. Taking Quinean empiricism as a paradigm, I argue, after Pap, Wright and McFetridge, that the modal eliminativist's position is untenable due to its own incoherence. I argue that, beside other problems, modal reductionists such as David Lewis and D.M. Armstrong face difficulties in respect of purging the appeal to primitive modality from their own theses. Therefore, it remains to be seen whether a reductionist account of modality can succeed.

In Chapter 3 I illustrate how modal projectivism is ill-placed to account for *de re* modality. I expand upon the distinction between logical and metaphysical modality. Having distinguished, under Hacking's influence, between *de re* and *de dicto* modality, I argue for realism about a class of *de re* modality on the basis of work done by Wiggins. I charge that anti-realist conceptualism about modality and essence results in an untenable and epistemologically barren metaphysic. In addition, when the conceptualist realist dialectic developed by Wiggins is duly recognized, anti-realist conceptualism fails to get off the ground. That dialectic is ignored by Sidelle, yet it undercuts his attack on real essentialism.

In Chapter 4 I expand upon the *de re*/*de dicto* distinction. I discuss the conceptions of the modality involved in the notion of verifiability in principle which can be extracted from the works of the logical positivists themselves. I claim that the logical positivists conflated logical possibility and substantive possibility despite their predominant intention to characterize verifiability in terms of logical possibility of verification. I argue, further to the discussion of modal epistemology in Chapter 2, that the classification of cognitively meaningful statements as either analytic or empirical is inadequate. I defend the allocation of *de dicto* status to constructions employing the logical modalities. I discuss the issue in relation to some revisionary accounts of logical possibility offered under the influence of essentialist thought. I reject these, seeking to maintain the distinction between logical and metaphysical modalities. My views are influenced by the writings of McFetridge and Wiggins. I conclude with a brief comment on empiricism and essentialism in relation to the conflation of logical possibility and substantive possibility *de re*.

Acknowledgements

Chapter One

The Elimination of Metaphysics

This chapter surveys philosophies which have been thought to advocate the elimination of metaphysics. A critique of metaphysics should not be confused with an anti-metaphysical philosophy, where the latter is understood to involve the advocacy of the elimination of metaphysics. Failure to recognize this results in a skewed vision of the history of philosophy. Zealous advocates of the elimination of metaphysics have tended to read any critique of metaphysics (and, worse, any critique of a species of metaphysics) as broadly participant in a common cause.

This study is not concerned with philosophies such as that of Kant, who criticized a species of metaphysics and whose project was to reform, rather than to eradicate, metaphysics,[1] and that of Heidegger, who criticized the history of metaphysics (i.e., the actual practice of metaphysicians since classical times) as a history of forgetting and as 'ontical', rather than 'ontological'. For Heidegger, what had been forgotten was what he took to be the true crux of ontology, the question of the meaning of being. He regarded ontological inquiry as concerned with the meaning of being, in contrast to that which he accused metaphysicians through history of concentrating upon, namely the ontical, that is, concern with the existence of entities. Heidegger sought to reorient metaphysics to what he regarded as its primary task, not to bring about its death.[2]

1.1 Empiricist Anti-Metaphysics

The Humean Background

> If we take in our hand any volume; of divinity or school metaphysics, for instance; let us ask, *Does it contain any abstract reasoning concerning quantity or number?* No. *Does it contain any experimental reasoning concerning matter of fact and existence?* No. Commit it then to the flames: for it can contain nothing but sophistry and illusion.

---

[1] Cf. Strawson (1966, 16-18); Walsh (1975, 4); A.R. White (1987, 85, 87); Körner (1991, 99).

[2] That Heidegger sought not to eliminate, but to reorient, metaphysics is manifested in [1927](1962a, esp. 28-35) and [1929](1962b, *passim*).

Hume (closing remarks of *An Enquiry Concerning Human Understanding* [1748] (1975, 165))

An explicit rejection of metaphysics, as distinct from a mere abstention from metaphysical utterances, is characteristic of the type of empiricism which is known as positivism. Ayer (1946, 135)

Hume is commonly regarded as a philosopher who espoused anti-metaphysical views, especially given the Humean lineage of the classic anti-metaphysical philosophy of the twentieth century, logical positivism. As Stroud (1977, 220) states, some writers belonging to that movement erroneously took Hume, on the basis of the closing paragraphs of the *Enquiry*, to be an earlier proponent of their own anti-metaphysical thesis that the claims of metaphysics are literally meaningless.[3] Hume questions the intelligibility of some metaphysical doctrines and questions, such as Spinoza's doctrine of substance, the question of personal identity, and the question of the materiality or immateriality of the soul,[4] but nowhere does he claim that all metaphysics is meaningless. In fact, the attribution of any such view to Hume is very far from accurate. Stroud does not make a clean break from the positivistic reading himself, in that he adds that 'no doubt [Hume] was not disposed to what he would call "abstruse" metaphysics'. Stroud's comment is unhelpful, and it subverts Hume's taxonomy, since Hume regards 'abstruse', in contrast with 'easy', philosophy, as the profound and truly insightful form of philosophical inquiry. It is within this category that he distinguishes the 'false and adulterate' and the 'true' metaphysics: he regards the former as obscure and sophistical.[5] Stroud then describes Hume, unfortunately, as displaying an 'anti-metaphysical bent' which endeared him to twentieth-century philosophers. Stroud recounts how Hume was viewed as 'the best early exponent of a view' which sought to 'put metaphysics...beyond the sphere of human cognitive concern'. Contrary to that interpretation, from which Stroud does not sufficiently distance himself, Hume sought to restrict metaphysics to that which was within the scope of human understanding. The positivists read their own anti-metaphysical views into Hume, and accordingly appropriated Hume, casting him as the forebear of their own anti-metaphysical project.

Members of the positivist movement stated their reading of Hume's views on metaphysics in a quite unambiguous manner. Referring to the aforementioned passage in Hume's *Enquiry*, Carnap [1934](1992, 55) writes, '[o]ur

---

[3] Examples of positivistic readings of Hume follow shortly: it will be apparent that they are not offered exclusively by positivists.

[4] Hume [1739-40](1978, 234, 240, 243, 246, 250, 251).

[5] [1739-40], Introduction, (1978, xiii-xix); [1748], Section 1, 'Of the Different Species of Philosophy', (1975, 5-16).

antimetaphysical position has been formulated by Hume in the classical manner'.[6] The anti-metaphysical position Carnap has in mind is quite clearly the view that all metaphysical discourse is meaningless. Directly after quoting Hume he describes an objection to the position that all metaphysics is meaningless, using the phrase 'as against this', that is, as against what Carnap takes to be Hume's view. Carnap reads the thesis that all metaphysics is meaningless into the passage from Hume, despite the fact that Hume writes nothing of the kind.

Ayer (1946, 54) claims that 'we may say not merely that [Hume] was not in practice a metaphysician, but that he explicitly rejected metaphysics'. He then produces the aforementioned passage from Hume as evidence for this claim. In a careful moment, Ayer does not commit Carnap's mistake of reading Hume as declaring the propositions of metaphysics meaningless:

> Hume does not, so far as I know, actually put forward any view concerning the nature of philosophical propositions themselves, but those of his works which are commonly accounted philosophical are, apart from certain passages which deal with questions of psychology, works of analysis.[7]

Nevertheless, Ayer does ask, rhetorically, whether the Humean passage can be interpreted in any way other than as 'a rhetorical version of our own thesis that a sentence which does not express either a formally true proposition or an empirical hypothesis is devoid of all literal significance'.

It is a measure of the strong grip on philosophy gained by the logical positivist movement that the positivistic reading of Hume became widespread and enduring, very much in spite of Hume's actual writings. The actual impact of the positivist reading is all the more formidable when one considers that Stroud, who sought to build upon the naturalistic reading of Hume initiated by N.K. Smith (1905; 1941),[8] does not escape its clutches. The strong influence of the positivist reading is evidenced in writers other than Stroud, whose lapses into it are merely occasional. For example, Passmore (1952, e.g., 12, 15) frequently refers to Hume

---

[6] Cf. Carnap [1934](1937a, 280). The claim of Weinberg (1936, 2) that '[i]n his critical work Hume is the first great positivist' is merely asserted rather than shown to be the product of scholarship.

[7] Contrast the less careful Ayer's claim (1959a, 10) that the closing paragraph of Hume's *Enquiry* 'is an excellent statement of the positivist's position'; cf. Ayer (1969, 173), 'the Logical Positivists...rejected metaphysics on the ground that metaphysical doctrines were not even false but literally nonsensical. This is indeed a view that goes back to Hume.' On the nature of philosophy, cf. (1973, 22) where Ayer views the end of Hume's *Enquiry* as implying that the true task of philosophy is analysis: this is in apparent contrast with Ayer (1980, 25).

[8] There are interpretations of Hume other than the two I mention. Smith argued against earlier commentators who interpreted Hume as a subjective idealist.

as a positivist.[9] According to Urmson (1956, 102), 'in a high-flown, but not untypical, passage Hume had consigned all metaphysics to the flames as worthless': note the erroneously employed quantifier. Urmson then echoes the careful Ayer: 'Hume...anticipated [the] position [that all metaphysics is unintelligible], but only in *obiter dicta*, and as a rhetorical flourish, not as a fully worked-out thesis'. Boeselager (1975, 7) comments that 'For Hume, there could be no ontology or metaphysics'.[10] Poser (1988, 311-312) writes that Hume rejected theology and school metaphysics, but then goes on to describe Hume's philosophy as 'a form of positivism' which 'rejected metaphysics as impossible and meaningless'. Post (1991, 16), after describing the positivists' anti-metaphysical application of their version of Hume's fork, does not distinguish their views on metaphysics from those of Hume himself, depicting Hume as describing all metaphysics as containing nothing but sophistry and illusion and being worthy of committal to the flames.[11]

Flew (1991, 169) perpetuates the myth which even the careful Ayer denied, namely that Hume described any statement concerned neither with reasoning about matters of fact nor reasoning about relations of ideas as unintelligible. After quoting the opening paragraphs from Section 4, Pt 1 of Hume's *Enquiry* [1748](1975, 25-26), Flew states that Hume 'is...claiming to have noticed, what is manifestly not the case, that every assertive utterance which is to any extent intelligible falls unequivocally into one or other of these two mutually exclusive and together exhaustive categories'.[12] Rather, as Foster (1985, 40) indicates, it is not the case that Hume makes any such claim.

---

[9] Nevertheless, Chapter 4, 'The Positivist', is more subtle than its title suggests.

[10] He adds (1975, 7-8): 'The impossibility of any ontology or metaphysics is a consequence of Hume's sensualism and nominalism. What he himself called the "true metaphysics" is epistemology and psychology, to be carried out along the lines of Newtonian physics.' (One wonders what nominalism is if not a metaphysical point of view.) On 'true metaphysics' see the main text below.

[11] Part of Hume's famous passage is quoted, where, significantly, the phrase 'school metaphysics' is omitted.

[12] Cf. Hanfling (1981, 9). Meikle (1995, 182) claims that:

> Enlightenment writers usually understood the term 'metaphysics' to mean a science which purported to prove the existence of things in the supernatural world, and that was primarily how their opponents in the declining scholastic tradition understood it too. Neither side distinguished between this sense of the term, and the primary sense in which metaphysics, together with logic, is the most fundamental area of philosophical inquiry, and one which informs all other areas of thought, since thought of any kind works to one metaphysics or another. When Hume and others 'eliminated' metaphysics, they eliminated it in both senses at once.

In fact, Hume was neither guilty of this conflation nor desirous of the extirpation of the sort of metaphysics designated by the latter sense of the term. Hume was no doubt opposed to

It is plain that Hume was, and regarded himself as, a practitioner of metaphysics. Hume sought to criticize the prevailing metaphysics of his day, rather than to eliminate metaphysics *tout court*. Straight off, we can see that the claims made about Hume's attitude to metaphysics by the aforementioned logical empiricists (and those others who fell under the spell of the positivistic reading) were radically misguided, just by looking at Hume's actual writings in a quite matter-of-fact manner. In the opening paragraph of the introduction to his *Treatise*, Hume attacks the lack of rigour often displayed in philosophy and in the sciences. He proceeds to complain about the triviality and fragmentation he finds in these disciplines. He describes the common prejudice against metaphysical reasoning and gives an account of its source. He makes it quite clear, in an unapologetic fashion, that his own project is of a kind which would be the object of this common prejudice:

> if truth be at all within the reach of human capacity, 'tis certain it must lie very deep and abstruse; and to hope we shall arrive at it without pains, while the greatest geniuses have failed with the utmost pains, must certainly be esteemed vain and presumptuous. I pretend to no such advantage in the philosophy I am going to unfold, and would esteem it a strong presumption against it, were it so very easy and obvious. [1739-40](1978, xiv-xv)

The crucial science for Hume, as he repeatedly makes clear, is the science of human nature: when conducted properly, it constitutes the true metaphysics.[13] True metaphysics, in contrast to the false and adulterate metaphysics of the schools, is confined to concern with that which is within the limits of the human understanding. In this respect Hume can be said to distinguish between transcendent and immanent metaphysics.

That Hume is in no doubt that he is a practitioner of metaphysics is clear from his discussions of the species of philosophy in both the *Treatise* and the *Enquiry*. An accurate exposition of Hume's discussions of the species of philosophy is given by Zabeeh (1973, 6-9), who does not shrink from recognizing that Hume regards his own method of philosophy as the true metaphysics. However, Zabeeh then retreats into a position whereby Hume is characterized as classifying metaphysics along with religion, with the committal to the flames of

---

Aristotelian (and other substance-based) metaphysical views committed, for example, to real necessity and possibility. In Chapter 3 I will defend non-objectual modal realism against empiricist critics who have inherited the Humean mantle.

[13] The first sentence of the *Enquiry* identifies 'moral philosophy' with 'the science of human nature'. Hume proceeds to state, as I will illustrate, that the species of moral philosophy are the easy and the abstruse philosophy. The abstruse philosophy is constituted by the false and adulterate and the true metaphysics. One of the objections against the false and adulterate metaphysics is that they are not properly a science. The true metaphysics is identical with the science of human nature properly conducted.

both firmly in mind. After quoting the end of the *Enquiry*, Zabeeh comments:

> it seems that metaphysics and theology for Hume, being subjects which fall under neither the experimental sciences nor the mathematical sciences, are worthless subjects. However, for Hume philosophy is not identical with metaphysics, and hence it does not seem that he wants to commit his own books to the flames. (1973, 10-11)

This is despite Zabeeh's earlier recognition (1973, 9) that Hume identifies true philosophy with true metaphysics: clearly, Zabeeh cannot have it both ways.[14] Hume regards himself as practising the true metaphysics and (presumably) Hume's fork poses no threat to that true metaphysics, especially when we bear in mind that it is *school* metaphysics (i.e. a branch of the false and adulterate metaphysics) towards which Hume is eager to direct the fire. Zabeeh goes on to mention '"The airy sciences" such as metaphysics' which Hume thinks 'should be replaced by the science of human nature' (1973, 13). Zabeeh claims (1973, 18) that Hume calls undecidable philosophical issues 'False Philosophy or simply Metaphysics', but Hume does *not* use the word 'metaphysics' in this way. He frequently indicates which species of philosophy he is talking about when he uses that word. Zabeeh proceeds to claim (1973, 19) that 'the most important objection against metaphysics is that it is not a science. Moreover, metaphysics is often used in support of religion'. Zabeeh's retreat is emphasized by his description (1973, 46) of Hume as waging war on metaphysics, with no attempt to state that it was some but not all metaphysics which Hume sought to extirpate.

Hume's philosophy of modality provides further evidence that he regarded himself as a practitioner of metaphysics. For example, he comments that:

> 'Tis an establish'd maxim in metaphysics, *That whatever the mind clearly conceives includes the idea of possible existence*, or in other words, *that nothing we imagine is absolutely impossible*. [1739-40](1978, 32)

Rather than arguing for this view, he regards it as well-founded on the basis of work done by other metaphysicians. Hume is perhaps taking this 'establish'd maxim' upon trust, a practice upon which he frowns elsewhere [1739-40](1978, xiii). If Hume shared the anti-metaphysical view of the logical positivists he would surely not have accepted anything on the basis of its being 'an establish'd maxim in metaphysics'. That he does is again illustrative of the point that it is unrigorous, false and adulterate, school metaphysics to which he is opposed, not all metaphysics. (In addition, lest it be suggested that what Hume describes as 'true metaphysics' is not metaphysics at all we should bear in mind Hume's famous account of causal necessity which counts, if anything does, as a piece of anti-

---

[14] Unacknowledged vacillation is also exhibited by Passmore (1952).

realist philosophy.) In their anti-metaphysical polemics the positivists were prone to identify all metaphysics as 'transcendent', affecting to go beyond experience: Hume is not guilty of characterizing metaphysics in terms of such a caricature.

According to Hume [1748](1975, 6-7), the easy philosophy, according well with common sense, will always be the more popular. The serious work is done, however, by the profound philosopher. Hume [1748](1975, 9) describes how nature ordains that the profound philosopher must live, outwith his study, according to the dictates of nature and common sense. He describes how the preference for easy over profound philosophy 'is often carried farther, even to the absolute rejecting of all profound reasonings, or what is commonly called *metaphysics*'. Far from seeking to eliminate metaphysics or declare it meaningless, Hume seeks to defend it against those who would jettison profound reasonings altogether.

Although, in contrast to easy philosophy, metaphysics is obscure, that in itself does not constitute a worthy objection, in Hume's opinion, to all metaphysics. Hume [1748](1975, 11) claims that 'the justest and most plausible objection against a considerable part of metaphysics' is 'that they are not properly a science; but arise either from the fruitless efforts of human vanity...or from the craft of popular superstitions'.[15] He adds [1748](1975, 12), 'We must...cultivate true metaphysics with some care, in order to destroy the false and adulterate.' The false and adulterate metaphysics is obscure to the extent that no light will be gleaned by means of its operations. In contrast, true metaphysics is abstruse but not futile.[16]

Presumably, Hume regarded true metaphysics as being contained within the rubric of his distinction between reasoning concerning matters of fact and real existence and reasoning concerning relations of ideas. It is the false and adulterate metaphysics which falls foul of the fork. How true metaphysics relates, more specifically, to the distinction, is another question. Again, it is a measure of the grip of the positivistic reading that interpretative issues concerning Hume's conception of true metaphysics have been neglected.

At the outset of our inquiry we have noted how anti-metaphysical philosophers are apt to lapse into regarding any critique of metaphysics as grist to their mill. It is reasonable to conclude that, in his attitude to metaphysics, Hume, unlike his positivist progeny, was a reformer, rather than a would-be revolutionary. The account of meaningfulness provided by the logical positivists was an innovation with Humean roots, rather than a mere reiteration of Hume's own

---

[15] The 'considerable part of metaphysics' referred to is the false and adulterate metaphysics. In viewing metaphysics and science as so related Hume's view has affinities with those of philosophers as diverse as Aristotle, Hegel and Quine. All these philosophers can be said to have a wider notion of science than that employed by the positivists. (Positivism involves the advocacy of the elimination of metaphysics, not just the notion of a unified science.)

[16] Hume [1748](1975, 16) expresses the desire to 'unite the boundaries of the different species of philosophy, by reconciling profound enquiry with clearness'.

account.

Carnap on the Elimination of Metaphysics

> Our thesis...is that logical analysis reveals the alleged statements of
> metaphysics to be pseudo-statements....there are two kinds of pseudo-
> statements: either they contain a word which is erroneously believed to
> have meaning, or the constituent words are meaningful, yet are put
> together in a counter-syntactical way, so that they do not yield a
> meaningful statement. Carnap [1932](1959a, 61)[17]

Empiricism, in so far as it constitutes the epistemological thesis that all non-
analytic knowledge is arrived at empirically, is consistent with a denial of the
literal meaninglessness of metaphysical claims.[18] As Chomsky (1965, 11, 148-
153) illustrates, grammatical well-formedness is a matter of degree: a construction
may be ill-formed and yet retain some intelligibility (e.g., 'All dogs eats meat').
So, the meaninglessness of metaphysics is established neither by appeal merely to
empiricist epistemology nor by appeal to normal standards of grammatical well-
formedness. In order to argue for the literal meaninglessness of metaphysics, the
logical positivists had to provide supplementary theoretical apparatus. Where
Carnap mentions counter-syntactical formations he is concerned not with the
grammatical rules of actual language, but with logical syntax. Carnap maintains
that the rules of grammatical syntax allow the formation of meaningless
constructions, while those of logical syntax do not. Grammatical syntax relates to
what Carnap calls the 'material' or 'connotative' mode of speech as logical syntax
relates to the 'formal' mode of speech.[19] The notion of logical, as opposed to
grammatical, syntax, is introduced by Carnap in his discussion of what he takes to
be the meaninglessness of certain constructions which are admitted by grammatical
syntax. Carnap claims that 'Caesar is a prime number' is meaningless and that the

---

[17] Cf. Carnap [1934](1937a, 7-8, 284).

[18] Cf. Hempel [1950](1959, 108), after Stace (1944, esp. section 11); Romanos (1983, 2).

[19] Cf. Romanos (1983, 13-14):

> The occurrence of universal words in the material mode of speech
> abounds, according to Carnap, in philosophical contexts, where it causes
> the mistaken impression that what is under investigation is the nature or
> existence of fundamental categories or features of reality, when it is in
> fact only a question of the basic types of expressions employed by a
> language. This confusion...can best be dispelled, in Carnap's view, by
> translation out of the material mode of speech into the formal mode of
> speech.

Carnap's view is embodied in [1934](1992, 58-61); cf. [1934](1937a, 281-315, e.g., 285),
'pseudo-object-sentences are simply *quasi-syntactical sentences of the material mode of
speech*'. As the material mode 'readily lends itself to wrong use' [1934](1937a, 312), so the
rules of grammatical syntax allow the formation of literally meaningless constructions.

fact that it is an admissible construction from the point of view of grammatical syntax illustrates the need for logical syntax, according to which it is an inadmissible construction. The only sentences in the material mode which are deemed meaningful by Carnap are those which admit of expression in the formal mode. He writes,

> '*a* is a prime number' is false if and only if *a* is divisible by a natural
> number different from *a* and from 1; evidently it is illicit to put here
> 'Caesar' for '*a*'. [1932](1959a, 68, italics added)

But why accept this? Carnap's claim that the construction 'Caesar is a prime number', although grammatically admissible, is meaningless in virtue of the fact that it violates logical syntax appears to be merely stipulative. According to our actual grammatical standards, we consider 'Caesar is a prime number' not meaningless, but false. What need have we to have the role of our actual standards for meaningfulness usurped by artificial, and perhaps arbitrary, standards of cognitive significance? Carnap's suggestion is that the fact that grammatical syntax allows 'meaningless' constructions necessitates logical syntax. But Carnap seems to want to use logical syntax to explain the meaninglessness of these constructions. Surely, it is at least equally open to us to stipulate that '*a* is a prime number' is false, not meaningless, where *a* is not a number.[20]

Carnap's comment suggests that 'It is false that *a* is a prime number' entails that *a* is a number. Carnap's tenet thus commits him to a rule of inference which is no rule of inference according to our ordinary logical practice. Given that we have no independent reason to sanction such a rule of inference, the position adopted by Carnap will be deemed less acceptable than the intuitive position whereby '*a* is a prime number' is false where *a* is not a number. Carnap's insistence upon the meaninglessness of such constructions indicates that he believes that there are facts of the matter about meaninglessness which escape the attention of grammatical syntax. If our intuition and our actual practice are at odds with Carnap's stipulation then the onus is upon the defender of Carnap's position to show us what is wrong with our approach. As it stands we have not been shown that the introduction of logical syntax is necessary or desirable.

---

[20] Examples such as 'Caesar is a prime number', known to students of linguistics as 'selection errors', should not be considered to be grammatically ill-formed, nor should they be precluded from being regarded as logically possible statements. In so far as they involve mistakes the mistakes are semantic and/or metaphysical, not grammatical. Russell (1940, 170) writes: 'It is difficult to give any indisputable instance of a logical possibility which is not syntactically possible...perhaps "the sound of a trombone is blue" is an instance.' I contend, consistent with the account of logical possibility to be adopted in Chapter 4, that examples such as Russell's which, setting aside metaphorical usage, clearly involves a selection error, are neither syntactically inadmissible nor logically impossible. Selection errors are category mistakes. Categories cannot be established on the basis of grammar alone, but involve (at least) semantic and (often) metaphysical facts.

Carnap uses the notion of 'syntactical type' (or 'syntactical category') in designating 'Caesar is a prime number' meaningless. Carnap lists examples of syntactical categories, 'e.g. thing, property of things, relation between things, number, property of numbers, relation between numbers, and so forth' [1932](1959a, 68). Since 'Caesar' is not of the category 'number', it cannot occupy the place of '*a*' in '*a* is a prime number' to form a meaningful statement. But it cannot be on merely syntactical grounds that Carnap takes 'Caesar is a prime number' to be meaningless. Category distinctions can be constructed on the basis of the intensions of terms, or on metaphysical grounds stemming from their extensions, but not from purely formal considerations. It is unclear as to what exactly the *logical* element is in logical syntax: after all, the statement that Caesar is a prime number is perfectly capable of participation in valid arguments. Carnap's claim that it is neither true nor false has to rest upon the antecedent claim that 'Caesar' is not a number word, which is surely a fact about the intension of 'Caesar'.

Despite Carnap's frequent emphasis on logical/syntactical considerations in his anti-metaphysical project, he also (e.g., [1932](1959a, 62-63)) incorporated the epistemological/semantic aspect which Ayer placed in the foreground, namely verificationism. Consistent with his increasingly favourable attitude to semantics, Carnap became dissatisfied with the implausible and puritanical appeal to logical syntax as a weapon against metaphysics. The verification principle became the predominant weapon in the armoury of the empiricist anti-metaphysician.[21]

Verificationism

The criterion for assessing the meaningfulness of non-analytic discourse evolved through various formulations.[22] The logical positivists did not specify the criterion

---

[21] On the history of the logical positivists' approach to language and metaphysics, cf. Romanos (1983, 4).

[22] Hanfling (1981, 33-34) suggests that the verification principle and the empiricist criterion of meaning ('the criterion of verifiability') be distinguished, on the grounds that the former purports to answer the question 'what is meaning?', whereas the latter is 'more modest' in that it involves testing for meaningfulness and does not entail a general theory of meaning. Hanfling claims that Ayer was committed to a criterion of meaning but not to the verification principle (contrast Ayer's own remarks quoted below). As against Hanfling, the verification principle came to be understood by some of its exponents as a criterion for meaningfulness, rather than an answer to the question 'what is meaning?'. This is clear from remarks, made by Schlick [1938](1979, 311) and quoted by Hanfling (1981, 143), that the verification principle (Schlick: 'The Meaning of a Proposition is the Method of its Verification') does not furnish a theory of meaning (cf. Schlick [1938](1979, 366) and Rynin (1957, 47-48)). Writers such as Schlick regarded the term 'theory' as applicable only to discourse which sets out hypotheses which admit of truth and falsity. Since they did not regard the verification principle as a hypothesis, they were hostile to accounts which construed it as providing a theory of meaning. Hanfling (1981, 143) regards this as 'yet another way in which the verification principle might be regarded': in so doing he commits himself to a view which is inconsistent with the distinction advocated earlier in his book. In

of meaningfulness in terms of actual (or even present possibility of) verification, but in terms of 'verifiability', 'confirmability' and 'verification in principle'.[23] Their accounts were explicitly modal, although the nature of the modality involved was an issue which tended not to be dwelt upon. I will discuss this issue at some length in Chapter 4.

One form of criticism of the logical positivists' strategy for getting rid of metaphysics related to logical problems associated with attempts to formulate a criterion of verifiability which could have the required restrictive force. Since, for example, scientific laws and discourse pertaining to certain entities postulated in scientific theories do not admit of direct verification,[24] the logical positivists, seeking not only to preserve but to venerate science, sought a more liberal verificationism. A balancing act had to be performed: a verificationism both liberal (in the sense that it included the favoured non-directly-verifiable discourses) and restrictive (in that it excluded metaphysics) was sought. Accordingly, the notion of indirect verifiability was introduced. In order to make room for scientific discourse, Ayer distinguished between 'strong' and 'weak' verifiability, favouring the latter:

> A proposition is said to be verifiable, in the strong sense of the term, if, and only if, its truth could be conclusively established in experience. But it is verifiable, in the weak sense, if it is possible for experience to render it probable. (1946, 37)

> ...we fall back on the weaker sense of verification. We say that the question that must be asked about any putative statement of fact is not, Would any observations make its truth or falsehood logically certain? but simply, Would any observations be relevant to the determination of

contrast to Hanfling, Dummett (1992, 140-143) distinguishes between two versions of the 'verification principle': (V1) The meaning of a statement is its method of verification, and (V2) A statement is meaningful if and only if it is verifiable. Although some positivists were disinclined to emphasize (V1), 'the core of a theory of meaning', Dummett indicates that (V1) provides a rationale for (V2) which 'historically, the positivists accepted'. (Dummett proposes an alternative rationale: (V3) The method of verifying a statement is an essential component of its meaning.) Dummett's description of (V1) and (V2) as two versions of the verification principle is warranted by the positivists' own descriptions of their views. It must be granted, however, that considerable confusion is fostered by the tendency in some logical positivist writings to conflate talk of meaning and talk of meaningfulness. Rynin (1957, 52) criticizes Schlick precisely in this regard.

[23] The view that the criterion of meaningfulness is *actual* verification is attributed to Comte by E.C. Moore (1951, 473).

[24] The point is made nicely by Hempel [1950](1959, 111-112); cf. Stace (1944, 217) who also indicates that the requirement of *direct* verifiability ('complete verifiability in principle') is both too restrictive (in that it excludes scientific discourse) and too liberal (in that it grants meaningfulness to any disjunction in which at least one meaningful statement is contained).

its truth or falsehood? (1946, 38)

In the preface to the second edition of *Language, Truth and Logic*, Ayer reformulated this as:

> a statement is verifiable...if some observation-statement can be deduced
> from it in conjunction with certain other premises, without being
> deducible from those other premises alone. (1946, 11)

The trouble with this, as Berlin (1939, 234) indicated and Ayer (1946, 11) acknowledged, was that it allowed empirical significance, in Ayer's words, 'to any statement whatever', since for any two statements S and O, where O is an observation-statement and S is any statement whatever, O is entailed by the premises 'If S then O' and 'S', whilst being entailed by neither premise in isolation. Ayer attempted to provide a formulation which would avoid this problem:

> a statement is directly verifiable if it is either itself an observation-
> statement, or is such that in conjunction with one or more observation-
> statements it entails at least one observation-statement which is not
> deducible from these other premises alone; and I propose to say that a
> statement is indirectly verifiable if it satisfies the following conditions:
> first, that in conjunction with certain other premises it entails one or
> more directly verifiable statements which are not deducible from these
> other premises alone; and, secondly, that these other premises do not
> include any statement that is not either analytic, or directly verifiable, or
> capable of being independently established as indirectly verifiable. And
> I can now reformulate the principle of verification as requiring of a
> literally meaningful statement, which is not analytic, that it should be
> either directly or indirectly verifiable, in the foregoing sense. (1946, 13)

Church (1949, 53) indicated that this response also fell prey to the criticism that it admitted any statement whatever as meaningful. Where O_1, O_2 and O_3 are logically independent observation-statements, and S is any statement whatever, the complex formula ($\sim O_1$ & O_2) ∨ (O_3 & $\sim S$) conjoined with O_1 entails O_3. Since neither statement alone entails O_3, the former statement is directly verifiable, on Ayer's definition. Church charged that S in turn will be indirectly verifiable since it entails O_2 when conjoined with the complex formula, O_2 being entailed by neither statement alone. Hempel [1950](1959, 115-116) criticized Ayer on the ground that where S is an empirically meaningful statement, whatever can be deduced from S and permissible additional premises can also be deduced from S conjoined with N and the same additional premises, where N is any statement whatever (e.g., 'The absolute is perfect').

Rynin (1957, 57-58) attempted to circumvent such logical problems by

claiming that a so-called meaningless sentence, such as 'The absolute is perfect' is not a statement, since 'a statement [is] a sentence possessed of truth value', and only statements enter into logical relations. He then claimed, for example, that 'if "The absolute is perfect" is not a meaningful statement neither is [any purported] disjunction' in which it is held to participate.[25] Hempel (1959, 127-128; 1965, 120) came to accept Rynin's point. He did so too easily, since Rynin provides no accounts of what it is for a discourse to be possessive of truth conditions and of how we are to determine whether a discourse meets the conditions which an answer to that question would lay down. For Rynin, the possession of truth conditions is presumably not sufficient for meaningfulness, since he comments (1957, 50) that our knowledge of those truth conditions (as distinct from knowledge of the truth-values of statements) is vital to 'cognition'. A discourse must possess truth conditions which are 'ascertainable' (1957, 53) if it is to be deemed meaningful. It is unclear as to how his account could constitute an attempted defence of 'a kind of verifiability principle of meaning' (1957, 46) unless he takes it that only verifiable statements and analytic statements have the appropriate truth conditions, in which case his discussion provides no real account of how the original logical problems associated with the verification principle are to be circumvented. If indirect verifiability is still required in order to avoid debarring a great deal of scientific discourse then Rynin's account achieves no progress.[26] Rynin provides no evidence that indirect verifiability is not so required.

Another form of criticism of the verificationist strategy for getting rid of metaphysics concerned the status of the verification principle itself. It was held, for example, that the principle, being neither analytic nor verifiable, is self-exclusive and 'metaphysical' by its own lights.[27] There was an awareness of this criticism from an early date.[28] Two sorts of answer were commonly made to the question of the status of the principle by its defenders, although the first was generally mooted, rather than endorsed. According to the first, the principle was held to fall within the rubric of the positivists' version of Hume's fork. That is, it was held to be

---

[25] The taxonomy employed by Rynin differs from that of those such as Ayer who, when careful, distinguished between meaningful and non-meaningful statements and held that all propositions were meaningful.

[26] Ayer (1973, 27) noted that none of the attempts to save the verification principle from Church's objection had succeeded. L.J. Cohen (1980) offers *a criterion of observational verifiability* which accommodates the criticisms of Church and Hempel against the *criterion of literal meaningfulness* offered by Ayer (1946, 13). Cohen does not set out to delimit the realm of literal meaningfulness, and his account does not entail that there are any non-observational discourses which cannot partake in logical relations. His concern is with the delineation of purely phenomenal language in science: he does not claim that scientific realism is literally meaningless, nor does he so deem ethics or metaphysics.

[27] E.g., Weinberg, although desirous of the elimination of metaphysics (1936, 193) accuses verificationism itself of being metaphysical (1936, 174). The issue is more recently raised by Körner (1979, 264) and M. Williams (1986, 11).

[28] E.g., Carnap [1934](1992a, 55).

analytic of the concept of literal meaningfulness, or, it was taken to hold as a matter of fact; the former being the clearly preferred option. Given the positivists' own conception of the task of philosophy as the logical analysis of language it was consistent for them to regard the principle as analytic. However, the supposed analyticity of the principle was far from obvious.[29] As Carnap [1930](1959b, 143) and Hempel [1945](1949, 222) noted, obviousness is not a necessary condition upon analyticity. Nevertheless, analytic premises from which the verification principle could be derived were not forthcoming. This led to the adoption of the second sort of answer, which was to maintain that the principle was a prescription which ought to be followed in the absence of any more convincing alternative. Ayer attempted to side-step criticism focusing on the status of the principle:

> in the preface to the second edition of *Language, Truth and Logic*, I treated the verification principle as a prescriptive definition. But why should the prescription be obeyed? I evaded this awkward question by defying my critics to come up with anything better. Ayer (1992, 149)

Such a response leads to an impasse in the debate between the anti-metaphysician and the defender of metaphysics. Metaphysicians were justifiably undisposed to relinquish their projects in the light of such a reply. If the criterion of meaningfulness offered is the best available that need not mean that it is adequate. The fact that it is purported to undermine metaphysics can be taken as a *reductio ad absurdum*, at least of the principle, if not of the search for such a criterion. What is 'better' will no doubt depend, in this case, upon the interests of the judges. From the point of view of some of Ayer's opponents this will be the abandonment of his project rather than theirs.

A third sort of answer to the question of the status of the verification principle, which considerably weakens its links with positivism, is suggested by Dummett:

> Tarski…charged natural languages with inconsistency on the score that they contained their own semantics, which no consistent language could do. The argument appears incontestable: it follows that no semantic theory governing a language can be formulated in that language itself, on pain of inconsistency. Any attempt to state such a theory must therefore lead to contradiction. (1992, 130-131)

Similarly, suggests Dummett (1992, 132-133), a general theory of meaning will fail to satisfy the criteria of meaningfulness which it lays down: such a theory cannot be expected to be self-applicable. In the light of Dummett's discussion Ayer admits:

---

[29] Cf. Dummett (1992, 130).

> I should have dismissed the objection that the verification principle does not satisfy itself as an *ignoratio elenchi*. The verification principle encapsulates a general theory of meaning and a general theory of meaning should not be expected to satisfy itself.
>
> I have also to concede to Dummett that when the verification principle is viewed in this way its cutting edge is blunted, at least as an instrument for executing metaphysics. I agree that in so far as metaphysics constitutes a set of semantic theories, the verification principle passes it by. (1992, 149-150)

The question of the status of the verification principle may lead to the recognition that it is indeed metaphysical, although this is established via a less obvious route (the details of which cannot occupy us here) than that followed by earlier critics of verificationism. I will attempt to show that the verificationism espoused by the logical positivists is itself metaphysical by a route which is more concerned with 'traditional' metaphysics.[30] In other words, my concern is primarily with being, the concepts we employ and the relations between being and the concepts we employ, rather than with the issues concerning logic and language, such as the applicability of the principle of bivalence, which predominate in Dummett's discussions. In contrast to the more common attempts to defend metaphysics against the verificationist attack, I will take a modal route.[31] I will lay the ground for my views on the substantive ontology of modality by arguing that modal discourse is neither eliminable nor reducible. Thereafter, I will argue for a realist view of *de re* modality. In the light of these views I will suggest that the logical positivists conflated logical and metaphysical modalities. This is an error which, I will argue, persists in contemporary philosophy, sometimes in *prima facie* unlikely quarters. In the course of my inquiry I will outline what I take to be the unfortunate results arising from this conflation. In addition, I will argue, *contra* the positivists, that there are cognitively meaningful statements which are neither analytic nor empirical but which include both empirical and non-empirical content.

A Modal Argument Against Metaphysics

---

[30] Since the positivist attack on metaphysics fails, those, such as Collingwood, Lazerowitz and Wisdom, who afforded metaphysics various sorts of consolation prize status (respectively: as encapsulating the history of ideas; as a fruitful stalking ground for the psychoanalyst; as a collection of interesting paradoxes) did so gratuitously. The views of these three figures are discussed at length by A.R. White (1987, 143-173).

[31] I do not claim originality in following a modal route *per se*. The attempt has been made by E.C. Moore (1951) and Hans Poser (1988). I do not claim originality in that I do it, but in how I do it. In Chapter 4, I examine the nature of the modality involved in verificationism. This is an issue which is neglected in the existing literature (including the works just mentioned). Although logical positivism is dead, there is value in noting previously neglected reasons for its deficiency. Also, verificationism is far from dead and there might be results arising from my inquiry which would pertain to contemporary views.

In the light of my programmatic concerns, it is interesting to note an explicitly modal anti-metaphysical argument. N.R. Hanson (1960, 86-87) argues that metaphysics is impossible on the grounds that '"Hume's dictum": that from a necessary proposition nothing contingent follows—and vice versa' is correct and that metaphysical arguments, since they 'usually purport to be both informative, i.e., non-tautological, and also apodeictically true, i.e., non-falsifiable...*must* purport' to be 'trans-type inferences', i.e., inferences 'from necessary propositions to contingent propositions—or vice versa'.[32] Hanson's argument incorporates the vital presumptions that all necessity is expressible by means of necessary propositions and that the only acceptable notion of objective necessity is that of logical necessity.[33]

I dispute Hanson's characterization of metaphysics, and the related presumptions, commonly adhered to by empiricists, that all necessity is *de dicto* and that the only objective necessity is logical necessity.[34] Hanson's argument asserts that, at a fundamental level, all metaphysical arguments purport to be trans-type. Contrary to Hanson's assertion, there are many metaphysical arguments which, when properly construed, cannot purport to be trans-type. In introducing his argument, Hanson equated arguments from what must be the case to what is the case (and vice versa) with arguments from the necessary to the contingent (and vice versa). For the metaphysician who makes use of the *de re* modal notions, however, there is a 'must' other than the 'must' which attaches to necessary statements (which must be true).[35] For example, from the logically contingent premise that it is necessary for water to be H_2O[36] it follows that it is truly predicable of water that it is H_2O. There is a clear sense in which this is an argument from what must be the case to what is the case, although it is not an argument from the necessarily to the contingently true.

A common type of metaphysical argument proceeds from a statement of what is the case and/or what is really possible, to a statement of what must be the case in order for the former to be actual or really possible. Arguments of this sort attempt to illustrate the natures of real existents. They do not concern themselves with 'the necessary', in Hanson's sense, at all. For Hanson, 'the necessary' relates to 'necessary propositions'. For philosophers who advance arguments of the kind just described, a sort of necessity relating to the essences of real existents is

---

[32] This reasoning from 'usually' to 'must' is invalid. Furthermore, I will contend that it is not the case that most metaphysics consists of inferences which purport to be trans-type.

[33] Hanson (1960, 90) recognizes a kind of epistemic necessity, relating, for example, to 'conceptual paralysis' which, as he intends it, is clearly a subjective notion.

[34] Other criticisms of Hanson's article are offered by Lehrer (1962) and Cole (1963).

[35] In order to avoid the implication that logical modalities are precluded from having *de re* status, I should point out that the philosopher alluded to here is one who makes use of *de re* modalities which are neither reducible to nor explicable in terms of the *de dicto* modalities. Whatever else they may be, the logical modalities are *de dicto*. I will substantiate these claims in the course of this book, especially in Chapters 3 and 4.

[36] Contrast the premise that it is necessarily true that water is H_2O.

admitted. The recognition of this non-logical necessity is perfectly consistent with the contingent existence of the world and the entities therein. In so far as a notion of necessity distinct from that recognized by Hanson is legitimate, his argument against metaphysics is undermined, since metaphysical arguments can employ that sense of necessity without purporting to be trans-type at all. Such arguments move from the logically contingent to the logically contingent. Although they are concerned with metaphysical necessity, they do not seek to establish necessary propositions. In later chapters I will argue that metaphysical necessity constitutes an intelligible notion of objective necessity distinct from logical necessity. Subsequently, I will defend realism about metaphysical necessity where it relates, for example, to the objects subsumed under natural kind concepts. The tendency, manifested by Hanson, to recognize only paradigmatically *de dicto* modalities has had a significance so great that the projects of some philosophers who have sought to rehabilitate paradigmatic modality *de re*, and realism about that modality (i.e., essentialism), have been tainted by the failure to be consistently observant of the proper form of essentialist claims. This will be illustrated in the proceeding chapters.

1.2 Wittgenstein, Metaphysics and Essentialism

Wittgenstein has been construed as an anti-essentialist and an anti-metaphysician. I will suggest that, contrary to such interpretations, the *Tractatus* can be viewed as putting forth an essentialist argument of the kind just indicated,[37] although the essentialism of the *Tractatus* should be recognized as of a very restricted kind compared to the essentialist views which became prevalent in the decades

---

[37] A characteristic which it shares with many other philosophical works, including, amusingly, Hegel's *Science of Logic*. Illuminating comment on the latter is provided by Houlgate (1995, 38):

> Necessity, for Hegel, is not an immediately evident feature of the world, but is what there turns out *in essence* to be. We do not begin with necessity, therefore, but rather *come* to the thought of necessity through considering what there *actually* is. Hegel's analysis of necessity thus begins not with necessity itself, but with actuality.

What there actually is (and what actually goes on) reveals what is genuinely possible, i.e., what is in accordance with the nature of reality. 'Actuality' here just means reality, and it is not meant to have any non-modal connotation: the conception at work is of an actuality which is naturally modal. Just as, for Hegel, actuality reveals necessity, so for Wittgenstein the actual possibility of language reveals the nature of reality. (Neither inquiry leads to any necessary propositions: terminological intricacies notwithstanding, the necessity pertinent to both cases is not formal, but ontological. In respect of the *Tractatus*, the possibility of representation, which grounds its actuality, has no tautology as correlative. Hegelian real necessity is formally contingent.) The essentialist metaphysician holds that the accidental provides indirect access to the essential: the point is elaborated at 2.2 below.

subsequent to the demise of logical positivism. The *Tractatus* purports to *show* how reality *must be* given the possibility of language, rather than to *state* what reality must be.[38] If the essentialism to which I will point is indeed present then it is a mistake to view the *Tractatus* as an anti-metaphysical work.[39] The attribution of neither metaphysical nor essentialist views to the *Tractatus* is novel. Carnap appears to have had some awareness that Wittgenstein was no anti-metaphysician in the manner of the logical positivists, since he opines that although Wittgenstein regarded philosophy as the logic of science, he drew 'no sharp line of demarcation between the formulations of the logic of science and those of metaphysics' [1934](1937a, 284). In addition, Carnap comments [1934](1937a, 304) that Wittgenstein was 'misled into enquiries' of an essentialist nature.[40] Carnap's latter comment suggests that either he did not read Wittgenstein's remarks about necessity (cited below) along standard empiricist lines (to the effect that there is no necessity other than standard logical necessity) or that he thought that Wittgenstein's views on modality and essence were inconsistent.

Having offered an account of why I attribute an essentialist view to the *Tractatus*, I will proceed to outline some general considerations pertaining to Wittgenstein's attitude to metaphysics which show it to be much more subtle than that of the anti-metaphysician. Finally, I will dispute the claim that there is any argument against real essentialism in the *Philosophical Investigations*. Since I do not believe that Wittgenstein was concerned to provide any such argument, what I

---

[38] The essentialism I attribute to the *Tractatus* relates to the idea that, given the possibility of representation, reality must be a plurality of simple objects. (Wittgenstein's world, i.e., the totality of facts, is dependent upon the objects which determine logical space.) The 'must' involved here is an essentialist 'must'. The attribution in question does not rest upon any claims about the natures of simple objects themselves.

[39] Russell, in his logical atomist phase, can in no way be regarded as advocating the elimination of metaphysics since he stated that his was a metaphysical project [1918](1956, 178, 215-216). Cf. Urmson (1956, e.g., 4-6, 47, 69), who characterizes logical atomism as purporting to supply a superior metaphysics, rather than to eliminate metaphysics. In contrast, Burnheim (1952, 3) claims that logical atomism is part of 'a group of philosophical doctrines which claim to eliminate all forms of metaphysical reasoning'. On the basis of Russell's influence on the Vienna Circle, and, apparently, of his use of the phrase 'a piece of gratuitous metaphysics', Joergensen (1951, 11-17) goes so far as to discuss 'The Logical Positivism of Bertrand Russell'. Russell (1940, 7) writes, 'I am, *as regards method*, more in sympathy with the logical positivists than with any other existing school' [my emphasis]. Russell [1950](1956, 367) claims: '"Logical positivism" is a name for a method, not for a certain kind of result.' It is hard to distinguish between a method and a doctrine if the very method includes doctrinal content (e.g., that one must avoid doing metaphysics because metaphysics is meaningless) and, in any case, Russell's sympathy is with the tenet that 'there is no special way of knowing that is peculiar to philosophy': later comments [1950](1956, 372) indicate his disagreement with some of the doctrines of logical positivists. Russell (1937b, 20) holds that 'if, through language, we can know facts, that implies a relation...which may serve to justify, to some degree, the traditional attempt to use logic as a clue to metaphysics'.

40 More recent interpretations which have it that Wittgenstein was concerned with essentialist enquiry include Hochberg (1971), Klemke (1971a) and Bradley (1992).

write in this regard serves as a critique not of Wittgenstein but of commentators who read anti-essentialism into the *Investigations*.

Essentialism in the Tractatus

Ayer held, throughout his career, that there is no necessity in nature and that the only legitimate sense of necessity is logical necessity.[41] In the *Tractatus* (6.37, cf. 6.3, 6.31), Wittgenstein claimed that the only necessity is logical necessity. At face value, this is a claim with which Ayer would sympathize. If we assume the premise that essentialist necessity is not logical necessity or the premise that logical necessity is not a kind of essentialist necessity[42]—premises which Ayer would no doubt endorse—Wittgenstein's comment appears to be an avowal of anti-essentialism. Wittgenstein often uses terms in non-standard ways in the *Tractatus*, but if Wittgenstein's claim is interpreted in accordance with how the terms it employs are most commonly understood then there is good reason to call it into dispute, as I hope Chapters 2 and 3 will show.

However, there is a case for saying that Wittgenstein's claim that the only necessity is logical necessity has little in common with Ayer's refusal to countenance any necessity other than logical necessity, since Wittgenstein is concerned with the logic of representation, rather than making exclusive reference to the 'logically necessary' as the logical positivists would have understood the phrase.[43] Wittgenstein uses the word 'logic' to describe the study of the nature of reality and its mirroring in language, not just to delineate the practice of rendering tautologies explicit.[44] The question which Wittgenstein's logical atomism addresses is this: how must reality be in order for representation to be possible? (That kind of essentialistic question, which is obviously not exhaustive of essentialism, is rejected in the *Philosophical Investigations*. Such questions are viewed as products of the obsession with naming which Wittgenstein criticizes

---

[41] See 4.2 below, including the quotation of his remarks to Honderich (1991, 224).

[42] Fine (1994) suggests that it is.

[43] Wittgenstein's concern with the logic of representation is suggested, for example, by 6.13: 'Logic is not a body of doctrine, but a mirror-image of the world.' Cf. Mounce (1981, 13): 'logic...makes representation possible'.

[44] By 'tautologies' I mean that which would have been considered tautologous by logical positivists: i.e., necessarily true propositions of logic (as understood by them) and mathematics. Wittgenstein's 'tautologies' were presumably different, at least in so far as he denied them genuinely propositional status. For Wittgenstein logical propositions fail to *say* anything, although they *show* the essence of the world. Only *factual* discourse is strictly possessive of truth value, according to Wittgenstein's *official* view (and despite his avowal of the truth of the contents of the *Tractatus*). In the *Notebooks 1914-16* (1979, 126), he comments that 'a logical proposition is one the special cases of which are either tautologous—and then the proposition is true—or self-contradictory (as I shall call it) and then it is false'. In the *Tractatus* (4.461, 4.4611) he characterized tautologies and contradictions as lacking sense, but not nonsensical. Wittgenstein did not use the word 'logic' in a univocal manner.

right from the start of that work.) Wittgenstein's view was that there is isomorphism between language and reality: language and reality were held to share form. Language does not make reality possible; rather, the converse relationship holds. That which is represented is prior to the mode of representation. The form of reality, the nature of being, is mirrored in language. Logical space is the totality of possible facts. It is logical space, rather than the facts which happen to pertain in the actual world, which is relevant to the question of the nature of reality, since logical space is exhaustive of all representations, although not itself a representation. It is the possibility of sense (i.e., linguistic representation) which is of concern to Wittgenstein, not the narrower realm of the representation of actual states of affairs. In other words, the concern is with the possibility of meaning rather than the assertion of truths. Form makes representation possible; the world and language have form in common. The form of the world, although reflected in language, is not itself linguistic in character, since that which is represented is prior to the mode of representation. I will later maintain a distinction between modality *de re* and *de dicto*, such that *de re* modality does not reduce to *de dicto* modality. This does not preclude *de dicto* modality from being a subspecies of *de re* modality, but nor does it entail that such a relationship holds: I seek to uphold neutrality on the question. Consistent with the classification of modality *de re* which I will support are the tenets (to which I subscribe) that modality *de dicto* is, narrowly construed, purely formal in character and, broadly construed, logico-linguistic in character, and that the class of modality *de re* is neither purely formal nor logico-linguistic in character. So, whether or not modality *de dicto* is a subspecies of modality *de re* (and, therefore, whether or not a subspecies of modality *de re* is logico-linguistic in character), if a modality is not logico-linguistic then it is not *de dicto*. As a result, the modality pertinent to the form of the world is *de re*. So, the *Tractatus* is committed to *de re* modality; furthermore, it is committed to *de re* modality realistically construed. Neither anti-essentialism nor anti-metaphysics is consistent with this commitment.

Wittgenstein addresses the nature of reality, whereas Ayer's logical necessity relates to modality *de dicto*, incorporating the assumptions that modality *de dicto* is never *de re* and that *de re* modality is misbegotten. As I will attempt to illustrate in later chapters, the notion of essence, relating as it does to *de re* modality, cannot be explicated in terms of the standard notion of logical necessity.[45] There is further evidence, then, that Wittgenstein's claim about necessity differs greatly from that of Ayer. The sorts of issues associated with recent essentialist thought relating, for example, to natural kinds, the necessity of origin, and causal powers, certainly do not seem to be of positive concern to

---

[45] Bradley (1992) depicts Wittgenstein as a *de re* modal atomist for whom logical necessity reduces to necessity *de re* (1992, 24). The notion of logical necessity operant here is by no means standard. Bradley's interpretation is confused in so far as it depicts essentialistic attributions in terms of necessary truths (1992, e.g., 183: '*any* modal ascription, if true, is necessarily so'), despite his own recognition (1992, 175-176) of the lack of equivalence between modality *de re* and *de dicto*.

Wittgenstein. It is plausible that he held anti-realist views where these are concerned—witness, for example, his remark in the *Tractatus* (6.3) that 'outside logic everything is accidental'—and none are directly concerned with the logic of representation.[46] However, the point remains that Wittgenstein's early thought employed a notion of necessity other than (standard) logical necessity. Furthermore, in his attitude to that non-logical necessity it seems that he was no *ontological* anti-realist, despite his *semantic* anti-realism about the contents of the *Tractatus*.

Wittgenstein and Metaphysics

From a historical point of view, there is no doubt that the dismissal of metaphysics as nonsensical that was proffered by the logical positivists was influenced by a reading of the *Tractatus*.[47] Their interpretation of Wittgenstein rested upon an ambiguity in relation to Wittgenstein's use of expressions such as 'meaningless' and 'nonsensical' and an inappreciation of the importance of his saying/showing distinction. Those who read Wittgenstein from a logical positivist perspective were prone to regard utterances classified as 'meaningless' or 'nonsense' as meaningless in their own sense, whereby metaphysics was held to be unintelligible, or, at best, merely expressive of 'an attitude towards life'.[48] To say that an utterance lacks sense or meaning need not be to say, however, that it is 'nonsense' in the pejorative sense.[49] In the *Tractatus* (4.461-4.462) Wittgenstein maintains that tautologies lack sense (contrast 'are nonsensical'), in that they do not say anything. This does not mean, however, that they do not show anything. Tautologies lack

---

[46] Any argument for attributing to Wittgenstein an essentialism any more lavish than that which I attribute here would have to look elsewhere, since considerations pertaining to the logic of representation do not provide sufficient justification for such a view. Bradley (1992) does attribute a more bountiful essentialism to Wittgenstein, but an examination of his account would involve exegetical issues too numerous and too detailed to be dealt with here.

[47] Ayer (1985, 18) states that the logical positivists, in designating metaphysics as nonsense in their pejorative sense, were taking their cue from Wittgenstein but that 'Whether Wittgenstein's own use of the term was always pejorative is not clear'. He proceeds to state (1985, 33) that the logical empiricists who took Wittgenstein to be advocating the dismissal of metaphysics and who took themselves to be following him did so on the basis of a misinterpretation: the 'very great influence' of the *Tractatus* was 'partly due to a misunderstanding'. Nevertheless, Ayer omits to mention the saying/showing distinction and displays a failure to afford it due cognizance, e.g., in his comment that, '[i]n the case of the *Tractatus* we have to choose between [Wittgenstein's] dismissal of its contents as senseless and his claim that they are true' (1985, 30).

[48] The implausible view that metaphysics is merely expressive of an attitude towards life is proposed by Carnap [1932](1959a, 78-80).

[49] Warnock (1958, 84-93) counsels against an interpretation of Wittgenstein's use (in both the *Tractatus* and the *Investigations*) of terms like 'nonsense' and 'meaningless' that likens his attitude to that of the logical positivists.

sense, and metaphysical claims are nonsensical, for Wittgenstein, in that they are not genuine propositions. He does not think tautologies to be gibberish, counter-syntactical, unintelligible, or what have you: he calls them meaningless because they do not *say* anything. It is clear, then, that Wittgenstein means something other than the positivists did by the use of the word 'meaningless'. Genuine propositions admit of truth and falsity. Unlike genuine propositions, the 'propositions' of logic and metaphysics do not picture anything: they do not say, they show.[50] Metaphysics is like theology, aesthetics and ethics in so far as metaphysical discourse has a non-representative function. Metaphysics cannot be eliminated, on Wittgenstein's account, precisely because he holds that there are limits to thought about which nothing can (literally) be said: his own project is to demonstrate those limits. Saying involves picturing, but the relation of picturing, on his account, cannot itself be pictured: it has metaphysical status. In contrast, for the positivists, there is no (legitimate) metaphysics. Wittgenstein holds that traditional metaphysics attempts, and fails, to breach the boundaries of language. It is illegitimate only in so far as it misconceives its own nature.

Wittgenstein's position also contrasts with the positivists in that he attaches importance to metaphysics. Ayer came to realize this divergence:

> We took it for granted that [Wittgenstein] judged metaphysics to be worthless, whereas in so far as he equated it with what he called 'the mystical', and included in it judgements of value and the appreciation of the meaning of life, his attitude was much more akin to that of Kant...
> Ayer (1985, 31)

Wittgenstein was later to claim, in *Zettel* (§458), that it is of the essence of metaphysics to confuse conceptual and factual inquiry.[51] This comment may be suggestive of the view that even a metaphysics which seeks to recognize its own non-descriptive status cannot avoid slipping into an apparently descriptive *modus*

---

[50] Mounce (1981, e.g., 43, 95, 102), Bradley (1992) and Young (1986) are among the commentators who emphasize the importance of the saying/showing distinction. Young thinks that this distinction is important to distinguishing between immanent and transcendent metaphysics in reading the *Tractatus*. He claims (1986, 291) that Wittgenstein viewed immanent metaphysics as relating to what cannot be said but can only be shown, whilst, like Kant, 'reject[ing] transcendent metaphysics as a branch of philosophy making scientific pretensions'. On Young's interpretation immanent metaphysics is allowed to stand as showing the structure of reality: it is not up for elimination. Young (1986, 292) refers to 4.111, where Wittgenstein makes specific mention of the status and function of philosophy. On Young's account, transcendent metaphysics is 'allowed to aim at dealing with the problems of life which matter most' (e.g. God, immortality and free will): it is up for replacement by religion. This contrasts with the interpretation offered by Ayer (1985, 31), who, making no reference to any immanent/transcendent distinction, suggests that Wittgenstein may have identified metaphysics precisely with these important concerns.

[51] Cf. *Philosophical Investigations*, §392, where he gives an example of an approach to philosophy which 'oscillates between natural science and grammar'.

operandi: such an interpretation is certainly consistent with Wittgenstein's apparent ambivalence concerning the 'propositions' of the *Tractatus*. Wittgenstein held that contrary to what metaphysicians tend to suppose, theirs is not a factual inquiry: neither is that of the *Tractatus*. Metaphysics and logic are concerned, on this account, with form (i.e., the essence of the world), which is shown, not described. For Wittgenstein, metaphysics is expressive, rather than representative, but not, as Carnap claimed 'of an attitude towards life'. Admittedly, Wittgenstein's opinion of metaphysics is relatively difficult to decipher. Nevertheless, it is not fanciful to suggest that Wittgenstein's position may have affinities with that of Kant, in that he is concerned with the limits of thought: he believes there *is* something (i.e., the form of reality) beyond thought and language about which nothing can be *said*.[52]

There is significant critical opinion according to which Wittgenstein is not seeking to eliminate metaphysics in the *Philosophical Investigations* but to understand the nature of metaphysical and philosophical problems.[53] The critique of metaphysics and philosophy offered in the *Investigations* is similar to that offered in the *Tractatus*. Metaphysicians are held to err in that they view their problems, and their purported answers to these problems, as factual, rather than conceptual, because the surface form of the language in which they are couched is akin to that displayed by genuinely factual (i.e., empirical) discourse.[54] Fann (1969, 94) writes that Wittgenstein 'criticises metaphysics because it has been *presented* in an empirical form, not because it deals with unimportant matters'. Wittgenstein seeks to render clear the conceptual, rather than factual, nature of metaphysics: 'My aim is: to teach you to pass from a piece of disguised nonsense to something that is patent nonsense' (*Investigations*, §464). Although this comment appears to have an extremely disparaging air, it is consistent with Wittgenstein's long-standing view that non-descriptive discourse can be valuable and that it can show without saying. Kahl (1986, 297) writes, 'for Wittgenstein only conceptual investigations are legitimate heirs to the subject that was originally called "philosophy"': this is consistent with the Tractarian view of philosophy as non-factual. Wittgenstein would agree with the logical positivists that metaphysics is meaningless in the sense that it is unverifiable.[55] However, for Wittgenstein this is just another way of saying that its method of investigation is conceptual, not empirical.

Wittgenstein's aims included elucidating the structure of reality (*Tractatus*, 6.54) and showing metaphysics to be metaphysics (*Investigations*,

---

[52] Readings on which Wittgenstein has been seen, like Kant, not to seek the elimination of metaphysics but to distinguish between its legitimate and illegitimate species include Kahl (1986), Young (1986), and (especially) A.R. White (1987, 116-126).

[53] E.g., Fann (1969, 86-96) and Pitkin, (1972, e.g., 19, 289-290). The most relevant parts of the *Investigations* are §§109-133.

[54] Cf. Fann (1969, 90-91) and A.R. White (1987, 124).

[55] Cf. Kahl (1986, 298).

§464). He advised that whenever someone wanted to say something metaphysical, he should be shown that he has 'failed to give a meaning to certain signs in his propositions' (*Tractatus*, 6.53). This remark can be construed as indicating that metaphysics proper shows but does not attempt to say. The recommendation which follows this remark, that nothing should be said except that which can be said ('i.e. propositions of natural science'), does not entail that there is no place for metaphysical discourse. Wittgenstein's recommendation is consistent with the maintenance of a metaphysics which does not attempt to say anything metaphysical, but nonetheless uses metaphysical discourse to reveal the form of reality: this is very fortunate, given the plausibility of this as an interpretation of the status of the contents of the *Tractatus* themselves.[56] Wittgenstein can be seen as distinguishing between a metaphysics which conceives itself to be saying something and a metaphysics, like his own, which shows, and recognizes that it is the business of metaphysics to show rather than say.

Essentialism and the Philosophical Investigations

Wittgenstein's later philosophy is regarded by some as anti-essentialist. I have already indicated that I accept that the essentialistic methodology of the *Tractatus* is rejected in the *Investigations*. What is not to be found in the latter work, however, is any argument against real essentialism.

Two aspects of the work which feature in anti-essentialist readings are the considerations concerning family resemblances and a slogan about the relationship between essence and grammar.[57] Concerning the former, Wittgenstein writes:

> Consider for example the proceedings that we call 'games'....What is common to them all?—Don't say: 'There *must* be something common, or they would not be called "games"'—but *look and see* whether there is anything common to all.—For if you look at them you will not see something that is common to *all*, but similarities, relationships, and a whole series of them at that. (*Investigations*, §66)

What follows from Wittgenstein's claim is not that essentialism must be rejected, but that searching for an essence common to all things classified under the same word may be an erroneous project. It does not follow that an anti-realist account of all modality *de re* must be adopted, particularly since it is entirely compatible with essentialist metaphysics and semantics to recognize that not all names and classificatory terms relate to real essences.[58] In fact, the example used by

---

[56] Cf. Mounce (1981, 102).

[57] Anti-essentialist readings include Hallett (1991) and Petrie (1971).

[58] Cf. Sorabji (1980, 194) who comments that, as an objection to Aristotelian essentialism, Wittgensteinian considerations about family resemblance are 'misplaced'; the Aristotelian

Wittgenstein is particularly harmless to the essentialist who takes the paradigmatic cases of real essence to relate to natural kinds rather than artifacts. At most, Wittgenstein's comments indicate that there need not always be essences common to items classified under a common term. From this it does not follow that there can never be any essences corresponding to such terms; nor does it follow that there are no such instances. Nothing Wittgenstein says about essence is inconsistent with real essentialism. The paradigmatic essences—those pertaining to natural kinds—are not threatened by his comments, since the essentialist can well recognize that not all purported natural kind terms even succeed in referring. The discovery that a purportedly natural kind term fails to refer, or that it picks out a merely nominal essence, constitutes an advance in our knowledge of the natural realm, far from being an illustration of the ill-foundedness of essentialism.[59]

Wittgenstein claims (*Investigations*, §371) that '*Essence* is expressed by grammar'. From this it does not follow that all, or even any, necessity is purely linguistic in character.[60] Wittgenstein's claim should not be mistaken for the non-equivalent claim that essence is essentially and exhaustively linguistic. That the source of necessity is in language certainly does not follow from the claim that essence is expressed by grammar any more than that it follows that the source of the artist's inspiration is the painting because it is expressed by the painting. (There is a sense in which the tenet that essence is expressed by grammar accords well with the defence of essentialism I will support in Chapter 3, where I will argue that essentialist attributions pertaining to natural objects exhibit a characteristic grammatical form. Of course, this does not entail that such attributions are always expressive of a real essence.)

It is generally accepted that the later Wittgenstein propounded an anti-realist account of (standard) logical necessity. Granting that he did, it does not follow in any obvious manner that he had an anti-realist view of necessity *de re*. This is illustrated by the fact that there is no obvious incoherence involved in maintaining, for example, that the only real necessity there is involves natural compulsion, biological need, etc., while viewing logical necessity as lacking ontological ground. To deny coherence to such a stance at the outset would, on the assumption that meaning is crucial to the logical modalities, beg the question against any physicalist realist about nature who combined anti-realism about meaning with realism about natural necessity. I see no obvious way in which to object to such a position in point of *ontology*. However, I believe that a realist view of logical necessity is necessary to the *epistemology* of some *de re* modal claims: most obviously, those concerning *de re* possibility. A fuller account is given at 2.2: the specific form of realism about logical necessity I adopt is of conceptualist, rather than platonist, hue.

does not have it that, for any classificatory term whatever, all things classified under the term share a common essence.

[59] Cf. Wiggins (1980, 82).

[60] Contrary to Petrie (1971, 144) it does not follow from the quoted comment and the '"meaning is use" doctrine' that the *source* of necessity must be in language.

Even if Wittgenstein did have an anti-realist view of necessity *de re*, there is no argument to support such a view in the *Investigations*. The passages which are sometimes regarded as anti-essentialist do not actually establish anti-essentialism. It is doubtful that they even suggest anti-essentialism. Wittgenstein does not explicitly set out to offer a rebuttal of essentialism and there is no indication in Wittgenstein's text that he regarded his comments on essence as expressive of anti-essentialism. Of course, Wittgenstein may well have been ill-disposed to essentialism at this stage in his philosophical career. However, citation of the purportedly anti-essentialist passages mentioned above neither furnishes a critique of essentialism nor provides sufficient evidence that Wittgenstein held anti-essentialistic views. The passages in question are anti-essentialist only if essentialism is to be identified with the implausible position that it is always the case that all things classified under a common term share some characteristic not shared by things subsumed under different terms.[61,62]

---

[61] Hallett (1991, 2) describes the tenet that all members of a class have 's*omething* in common...(a shared family resemblance for example)' as an 'innocuous' form of essentialism. He seeks to oppose what he takes to be traditional essentialism, according to which essences 'are core properties or clusters of properties present, necessarily, in all and only those things which share [a] common name'. Despite Hallett's reluctance (1991, 3) to provide 'a precise definition' of essentialism, this illustrates a tendency to confuse essentialism with the implausible tenet indicated in the main text above.

[62] The implausible tenet indicated in the main text above is more attributable to traditional empiricist semantics, as characterized (but not endorsed) by Sidelle (1989, 10, 170-172). The common characteristic in question is the satisfaction of a definite description or an analytic definition. (Sidelle seeks to retain the conventionalist core of empiricist semantics, while rejecting the traditional tenet.)

Chapter Two

Modal Primitivism

2.1 Primitivism, Eliminativism and Reductionism

Minimally, modal primitivism is the view that modal idioms are up neither for elimination nor for reduction to non-modal bases.[1] Anti-realist modal primitivism is an option: for example, one can be an irrealist about modality. Irrealism is a species of anti-realism about a discourse which, in contrast with reductionism and eliminativism, does not approach the discourse via the traditional means, i.e., the standard truth-conditional rubric. An irrealist about a discourse holds that there are no genuine truth-conditions pertaining to that discourse and that the discourse has some role other than purporting to be traditionally assertive. Thus, in contrast with the eliminativist, the irrealist does not hold that attributions employing the disputed discourse are erroneous.

In contrast with a minimal semantic primitivism, committed to the tenet that modal discourse is neither eliminable nor reducible, is an ontologically committed sort of modal primitivism. This incorporates the semantic primitivist's minimal position, and holds the further thesis that modality is ontologically, rather than merely conceptually, grounded. The ontological primitivist about modality holds that modality is in the nature of reality: actuality is construed as modal.[2] The extent of the difference between this position and that adopted by David Lewis will be elucidated later.

Primitivist positions will be discussed more fully in Chapter 3. David Lewis (1973, 85) depicts primitivism as 'an abstinence from theorizing'.[3] At the outset, some considerations can be offered as to why such a depiction of primitivism is erroneous.

---

[1] Blackburn (1984, Chapter 5) calls the former 'rejection' and sometimes calls the latter 'analysis'.

[2] Recent defences of such a view include Wiggins (1980) and Fine (1994). The former will be crucial to my support for realism about a class of modality *de re* in Chapter 3. Shalkowski (1996, 376) describes modal primitivism as 'the view that the world has a genuine modal character and that it does not possess this character in virtue of any nonmodal character it possesses'. Thus, he does not distinguish between *conceptual* primitivism and *ontological* primitivism.

[3] Cf. Butchvarov (1970, 113) who comments that if questions about necessary truth cannot be answered without appeal to the notion of necessity itself 'we would have a theory which may be of relevance for other philosophical topics...but of no relevance at all for the topic of the nature of necessary truth'.

Firstly, the adoption of primitivism can, as herein, be argued for on the basis of an examination of the demerits of non-primitivist positions. Thus, primitivism is established through theorizing.

Secondly, even once minimal primitivism has been adopted the realism/anti-realism debate is still open, so the adoption of primitivism does not signal an end to theorizing.

Thirdly, the elucidation and clarification of modal notions is not identical with their reduction, and can be performed in a framework which includes no reductionist aspiration.[4] Lewis seeks to debar non-reductive accounts of modality on the basis that only a reductive analysis of modality is genuinely explanatory. Despite Lewis's view, it is both legitimate and explanatorily fruitful to explain the modal via the modal, as I hope to illustrate. For example, the nature of the notion of essence can be elucidated by reference to the species of modality it involves. This is genuinely explanatory, since our rendering a genuine elucidation will direct us away from errors concerning the notion. An intra-modal explanation (i.e., an explanation of one modality-involving notion via another) does influence our view of the notion being explained: for example, it may affect the sort of epistemology which we will regard as apposite to the notion. So, in order to give fruitful accounts of modal notions it is not necessary to explain modality away. In any case, the prospects for modal reductionism are, I will argue, less than promising.

The Distinction Between Eliminativism and Reductionism

Eliminativism, the position which advocates that a type of discourse is jettisoned, is distinct from reductionism. Furthermore, eliminativism and reductionism are not only distinct, they are separate in the sense that neither is a subspecies of the other. The issue at hand is that *there can be no such position* as reductionist eliminativism: it is a mistake to view reductionism as supportive of eliminativism.[5]

---

[4] Cf.: Pap (1958, 422), 'there is no vicious circle [involved] in the attempt to clarify modal concepts by means of themselves'; Newman's comment (1992, 113) that a primitive notion 'can be characterized by saying things about it...and by saying what it is not'; Frege's distinction [1892a](1980, 42-43), cited by Newman (1992, 1), between definition and explanation; Wiggins (1980, 4), 'much can be achieved in philosophy by means of elucidations which *use* a concept without attempting to reduce it'; Grossmann (1983, 5), '[in the] most fundamental matters of metaphysics, definitions are impossible'.

[5] On the view attributed by Stalnaker (1976, 70) to Adams (1974, 224) and suggested by Roper (1982) reduction (in these cases a reduction of possible worlds discourse) can advance elimination. On this view, a reductionist account of possible worlds discourse eliminates possible worlds in the sense that it is illegitimate to postulate worlds along Lewisian lines as 'non-actual possibles': this is distinct from eliminativism about possible worlds discourse. Eliminativism about a discourse is different from the exercise of parsimony along the lines just mentioned.

Reductionists hold that the (purportedly) problematic A-discourse can be re-expressed in basic, less problematic or unproblematic B-discourse.[6] Eliminativism will here be classified as a position stemming from error theory: it follows, as I will illustrate, that it cannot be supported by reductionism. If eliminativism were to be alternatively defined so as to include any position which advocates that a discourse be jettisoned, then reductionists calling for the disposal of the 'problematic' discourse in favour of the 'unproblematic' discourse would also count as eliminativists. All such an alternative definition would do would be to pick out one tenet common to eliminativism and reductionism, namely the dispensability claim, to which I will later return.

A crucial reason why reductionism and eliminativism are quite separate stems from the role which truth plays in the two theories. Reductionism and eliminativism, as Blackburn (1986) emphasizes, share a common approach to the disputed discourse: the truth-conditional approach.

Reductionist positions are *truth-preserving*: claims made in the A-discourse are true or false in virtue of the fact that they stem from the base discourse and there is a 'mapping' relation between A-statements and B-statements. In contrast, eliminativism is an offshoot of error theory.[7] The error theorist about a discourse holds that the discourse says nothing true (whether about the world, our minds or our linguistic conventions) and is, in a sense about to be described, mistaken. An error theorist about a discourse holds that the discourse purports to establish truth but that its truth conditions are unfulfilled. Since claims in the discourse incorporate the claim to (truth-conditionally conceived) objectivity but go unfulfilled, the discourse fails in its purported project: the incorporated assertoric claim is unsubstantiated so the claims made in the discourse are false. The eliminativist subscribes to the error theorist's thesis and stipulates that the discourse should be jettisoned.[8] If the reductionist's claims about the relation between the A-discourse and the B-discourse are adhered to then there can be no question of reductionism leading to eliminativism. The two approaches are contrary to one another: reductionism cannot be a basis for eliminativism, nor can there be *any* relation of supplementation or complementarity between the two positions. The eliminativist is committed to jettisoning the disputed discourse because of its systematic falsehood; the reductionist need not be committed to dispensing with the disputed discourse at all. There is reason to suspect that any such aspiration is incompatible with the reductionist's project, given that the

---

[6] Cf. Blackburn (1984, 152-153): the problem can be one 'of meaning, or of epistemology, or of metaphysics'.

[7] The paradigm error theory oft-cited, particularly by Blackburn, is the approach to moral discourse proposed by J.L. Mackie (1977, 35, 48-49).

[8] Note the possibility of positions which adhere to error theory without seeking elimination. Someone might be an error theorist about a discourse and yet hold that it is not up for elimination due, for example, to its theoretical utility, or to *de facto* considerations about human psychology to the effect that we must view the world in terms of the discourse. An example of the former approach is the possible worlds fictionalism due to Rosen (1990).

endorsement of non-arbitrary equivalence relations between a discourse and its reductive base is necessary to reductionism.

The Dispensability Claim

Blackburn (1984, 151) describes reductionism in the following terms:

> A different attitude to a theory [i.e. other than eliminativism], which yet shades into outright rejection of it, is that its theses can be accepted, but their content can be expressed in other ways, using a different kind of vocabulary.

How can this be made sense of in the light of the strong separation of reductionism and eliminativism which Blackburn suggests (e.g., 1984, 147) and which I endorse? This is a question upon which Blackburn does not dwell. For my purposes, dealing more explicitly with the sense in which reductionism may be said, consistently with the aforementioned distinction, to 'shade into' eliminativism is worthwhile, since my argument has it that the proponent of (in the first instance, *minimal*) primitivism has two birds to deal with that it may not be possible to kill with the one stone.

McGinn (1981) makes three central claims concerning the definition of modal anti-realism. Firstly, he claims that 'anti-realism about modality is the doctrine known as *actualism*' (1981, 168). Secondly, he suggests that 'anti-realism is a thesis of reductive or eliminative actualism' (1981, 170). Thirdly, he states that to bring about 'the actualist programme would...be to show that nothing of significance is lost if we purge our thought of all modal notions' (1981, 171).

Now McGinn's first claim is incorrect, for the following reason. Possibilism is the doctrine, adhered to by David Lewis, that possible but non-actual objects exist. Actualism is merely the denial of this doctrine. That is to say, the actualist has it that *there are no possibilia*.[9] However, actualism does not entail modal anti-realism, since one can, as herein, adopt a position of *non-objectual modal realism*. Such an account has it that the modalities are real and that they are not to be accounted for via reduction to non-actual possibilia. What McGinn takes 'actualism' to mean is in fact the thesis that there are no possibilia conjoined with the *further* thesis that reality is non-modal in nature. I will distinguish the position which conjoins these two theses by the term 'rigid actualism'. (The importance of the distinction between actualism and rigid actualism will be returned to below.) McGinn's second claim is also incorrect. As we have already seen, reductive and eliminative approaches are not exhaustive of modal anti-realism.[10]

Although I take issue with McGinn's first two claims, his third claim may nevertheless serve to assist our understanding of what it might mean to suggest

---

[9] Cf. Prior and Fine (1977, 116).

[10] Cf. Divers (1990, Chapter 6; 1992, esp. 113).

that reductionism and eliminativism shade into one another. (This is so long as we substitute the word 'actualist' with the non-equivalent phrase 'reductive or eliminative'.) Furthermore, consideration of it may help us to see how this shading is not such that either of the approaches in question can properly be described as providing rational support for the other. Eliminativism and reductionism share the truth-conditional approach and the tenet that the disputed discourse is dispensable. That a discourse is dispensable, however, is not sufficient to establish that it is up for elimination, and to state its dispensability need not be to advocate its elimination. (By way of analogy, consider this: there can be two ways of referring to one thing. The fact that there are two might be construed such that neither of them is regarded as indispensable as against the other. At least one is essential to referring to the thing, but there is no one such that it and only it is essential.) Furthermore, the sense of the dispensability claim is quite different in the case of eliminativism than in that of reductionism. To reiterate: eliminativism is rooted in error theory, whereas reductionism is entirely different in that it is truth-preserving. It holds that the A-discourse (i.e. the one supposedly up for reduction) is true in virtue of the B-discourse (i.e. the reductive base).[11] So, eliminativism states that the discourse is dispensable because it is, in the specified manner, false, while reductionism states that the discourse is dispensable because any claim made in it can be made in the terms of the base discourse. The reductionist has to show that priority genuinely attaches to the purportedly reductive discourse in any relation of equivalence between the A- and B-discourses. If, as the reductionist has it, *the same* claim can be made in either A- or B-terms then consistency demands that either *neither* form of expression is admissible or that *both* are. The reductionist favours the B-discourse, but it legitimates the A-discourse, it does not encourage its eradication.

For the modal eliminativist, nothing of significance is lost if modal discourse is forsaken because that discourse, despite purporting to do so, does not convey any facts. For the modal reductionist modal discourse conveys facts, but the facts it conveys are not essentially modal: there is no distinctive cognitive content to modality over and above what can be expressed in either rigidly actualistic or non-modal discourse. The reductionist holds that were modal discourse to be jettisoned, none of the fact-stating purchase associated with it would be lost because that is entirely contained within the non-modal base discourse.

Eliminativism and reductionism, two species of anti-realism, can be described as shading into one another in that the set of the tenets of eliminativism and the set of the tenets of reductionism intersect. This is so because they share the dispensability claim. The foundational claims pertaining to the establishment of the dispensability claim are discrete, with the single exception of the common tenet

---

[11] 'True in virtue of' is to be interpreted in a strong sense (i.e., a sense that is stronger than mere supervenience) where reductionism is concerned. Mapping relations are held by the reductionist to pertain between A- and B-discourses, with the latter discourse having conceptual priority over the former.

that allows that the disputed discourse is held to aim at truth.[12] The sense in which reductionism and eliminativism can properly be held to shade into one another is meagre: the view that reduction cannot provide the grounds for elimination is vindicated.

2.2 Modal Epistemology

The Problem of Knowledge

In this section I will examine the problem of modal knowledge, outlining how eliminativism and reductionism are aligned with distinct forms of epistemological concern. I will agree with McGinn (1981) that there is a strong connection between modality and the *a priori*.[13] I will suggest that, when modality is approached from within the truth-conditional rubric, the broad options which face the theorist are as follows: (a) the *a priori*, and thus modality, is rejected on the grounds that it is epistemologically profligate, since either (i) the only acceptable model of knowing involves the knowers' being causally related to the known (and purportedly *a priori* knowledge involves no such relation); or, (ii) the *a priori* requires that some of the contents of our web of belief are held to be entirely immune from revision in the light of recalcitrant experience, but even the most hallowed principles of logic are revisable in the light of pragmatic utility, and other core, but more peripheral, beliefs are subject to refutation by experience; (b) the *a priori* is accepted, but only modality *de dicto* is held to be epistemologically acceptable; (c) the *a priori* is accepted and modality *de dicto* and modality *de re* are regarded, thereby, as epistemologically acceptable. Option (a) constitutes an eliminativist and radical empiricist approach. Option (a)(ii) constitutes Quinean eliminativism. Option (b) corresponds to the position of those empiricists (who, for convenience I shall call 'Humean empiricists') who accept one of the 'dogmas' criticized by Quine, namely a distinction between *a priori* and *a posteriori* knowledge. (Such empiricists commonly adopt reductionist theses concerning modality *de dicto* and purport to eschew modality *de re*.) Option (c) will be endorsed by those essentialists who accept that the *a priori* is implicated in all modal knowledge. (I know of no essentialist denial that the *a priori* is implicated in all modal knowledge.) In this section I will provide a brief exposition of Quinean eliminativism. Later in this chapter I will endorse argument to the effect that the rejection of the *a priori*, and thus modality, along the lines of (a) is

---

[12] Where the notion of truth is here understood in terms of the traditional truth-conditional rubric, in contrast, for example, with the expressivist alternative proposed by Blackburn (e.g., 1984, 197-202) and the (anti-expressivist) minimalist alternative proposed by Wright (1992).

[13] I endorse Thesis (II) of Peacocke (1997, 556): 'In every case in which a content containing a metaphysical modality is known, any modal premises in the ultimate justification which underwrites the status of the belief as knowledge are a priori.'

untenable. I will suggest, after McGinn, that since the essentialist and the Humean empiricist both accept the *a priori*, and since the *a priori* is implicated in all modal knowledge, there is a clear sense in which modality *de re* should be regarded as no more epistemologically problematic by the Humean empiricist than those sorts of *a priori* knowledge which the Humean empiricist already accepts. I will proceed to provide an epistemology for metaphysical modality *de re* which, although different from Kripke's account in some important respects, is of a broadly Kripkean form.

Epistemological concerns are a key source of motivation for non-primitivist positions about modality. A strain of these are held, in the case of error theory, to advance the claim that modal discourse is systematically false. (Epistemological concerns are not exhaustive of the motives for modal reductionism: David Lewis's reductionism is motivated by the supposed formal and theoretical benefits which it affords.)

Epistemological concerns are mentioned in rather vague terms by Blackburn (1984, 146, 151) as provoking eliminativist and reductionist responses: claims may 'seem suspicious' or 'invite scepticism'; 'we might find some particular set of terms awkward or puzzling in various ways'. According to Blackburn:

> The motivation for reductive analyses is based on a contrast. The commitments expressed in some original vocabulary (the A-vocabulary, or A-commitments) must be felt to introduce some apparent puzzle, either of meaning, or of epistemology, or of metaphysics, not introduced by statements made in the analysing, B-vocabulary. (1984, 152-153)

It is the epistemological sort of 'puzzle' which appears to dominate in motivating eliminativist approaches to modal discourse, and it is a central motive for other anti-realist approaches.[14]

Preliminary to his discussion of possible worlds semantics, McGinn imposes an epistemological condition upon 'ontological imputations', to the effect that:

> the introduced objects must play a suitable part in the learning and verification of the sentences concerned....what makes our sentences true should properly relate to our knowledge of their truth. (1981, 147)

McGinn construes 'ontology' in narrowly entitative (i.e., 'ontical'—and thereafter rigidly actualistic) terms, which allows him to characterize his own project of

---

[14] As I will illustrate, Quine's modal eliminativism stems from epistemological concern. An anti-eliminativist theorist who regards real necessity as epistemologically baffling is Sidelle, who claims (1989, 134-135) that such necessity is epistemologically and metaphysically 'occult'. I hope to go some way towards addressing these charges in this chapter and in the next.

establishing non-objectual modal realism as non-ontological (1981, 169-170).[15] McGinn takes ontological questions to be exhaustively about what entities and sorts of entities exist. As against such a conception, ontology is the study of being.[16] That study is not exhausted by addressing the kinds of question which would count as ontological on McGinn's definition, since the former includes questions about the nature of reality and the natures of existents, such as the questions as to whether the modalities are real aspects of being and whether individuals have essences. Nevertheless, McGinn's epistemological condition is applicable to any non-irrealist and anti-eliminativist account of modality in that 'what makes our sentences true should properly relate to our knowledge of their truth' (1981, 147).

McGinn distinguishes between two strains of epistemological concern which foster anti-realism:

> In one kind the form of the anti-realist complaint is that the realist truth conditions invite scepticism: this is because knowledge of those conditions appears mediated by a problematic inference...In the other kind the complaint is in a way more fundamental: the trouble here is that the anti-realist cannot comprehend how the introduced [problematic cognitive] faculty is supposed to operate at all. (1981, 167)

The form of sceptical concern in the case of the first strain is associated with the limitations of the faculty. There is held to be a problem about how the faculty can be sufficient to justify certain knowledge claims (adhered to by the realist) which seem to be beyond its grasp. As McGinn puts it, these knowledge claims require to be 'mediated by a problematic inference'. In the latter case it is the faculty itself which is held to be problematic, not the extent of its reach. The sceptical suspicion is serious enough, in the minds of the afflicted, to undermine the possibility of there being such a faculty.

The strains of scepticism which McGinn identifies seem to correspond, respectively, to the epistemological motives for reductionism and eliminativism about modality. The epistemologically-motivated reductionist is trying to resolve a perplexity which arises in the A-discourse as it stands. The A-discourse commands reductive analysis because it is held to give rise to a requirement for problematic inference. The aim is to reduce it to a base discourse whereby this requirement can be dissolved. The reductionist aims to give an epistemologically non-perplexing account of the truth conditions for modal claims. The modal eliminativist's

---

[15] The benefits of an alternative terminology to that of McGinn, in which the ontical and the ontological are distinguished, will be mentioned later.

[16] This is no mere terminological dispute, since McGinn's discussion (e.g., in identifying ontological realism with objectual realism) underestimates the tasks of ontology. I will later suggest that, where modality is concerned, ontological realism proper (which holds that the modalities are irreducibly grounded in reality) is in fact non-objectual. My conception of the tasks of ontology compares with that advanced by Grossmann (1983, 3-5; 1992, 1).

concern is deeper. The question for the eliminativist is not as to how (apparently problematic) modal knowledge can be rendered perspicuous: rather, the sceptical question which the eliminativist raises is as to how there can be modal knowledge at all. The eliminativist's answer is that there cannot. Furthermore, this is not because there is some modal truth which we are held to be unable ever to know. Rather, the eliminativist holds that since we have no faculty for modal knowledge acquisition the intelligibility of the idea that there are modal truths is undermined. This is illustrated by the case of Quine's view that there are no necessary truths.[17]

Quine's radical empiricism motivates his modal eliminativism.[18] He is committed to the view that all knowledge is empirical and that all beliefs are constrained by empirical evidence. In accordance with his radical empiricism, he rejects the analytic/synthetic distinction. He opines that if necessity is to be at all intelligible it must rest upon the notion of analyticity.[19] He holds to the conviction that the *a priori* and the analytic/synthetic distinction (and thus modality) are not epistemologically respectable. The analytic/synthetic distinction is called into question by Quine precisely because this 'dogma of empiricism' cannot be genuinely upheld by a pure empiricism: the commitment to the *a priori* manifested in the writings of Hume and the logical positivists is a vestige of rationalism. Given Quine's rejection of the *a priori*, he holds that we possess no cognitive

---

[17] Divers (1992, 113) lists Quine as a member of a modal irrealist tradition. In contrast, Wright (1986, 191) depicts Quine as an error-theorist. Quine is hostile to the logical modalities and essentialist modal attributions. Quine (1966, 48-56) states that the only notion of necessity with scientific utility is that of natural necessity, which relates to dispositional attributions and about which he is an anti-realist. Dispositional attributions, in turn, are held to be a requirement of a relatively primitive science: they become obsolete with scientific progress. It is difficult to be convinced by these comments. The indispensability of dispositional attributions to both science and philosophy is illustrated by their centrality to Quine's conception of 'stimulus meaning' (1960, 33-34). In so far as empiricism is committed to the idea that the world and the realm of necessity are distinct, and given that dispositional attributions are not equivalent to conditionals (*contra* Quine (1960, 33-34, 222-225) and typical empiricist accounts), the absence of a credible empiricist account of such attributions undermines the plausibility of empiricism. Discursive criticism of empiricist accounts of dispositional attributions is provided by Weissman (1965, esp. Chapter 2).

[18] Cf. Hookway (1988, 123): '[Quine's] empiricist approach to science ensures that he sees the notion of analyticity as the only hope for clarifying necessity—albeit a forlorn one.' (This point also relates to the note below.) Wiggins (1980, 104) suggests that it is 'only empiricism as empiricism misconceives itself...that could find anything...to cavil at' regarding Wiggins's 'principles and maxims governing the derivation of a modest essentialism'. (Unfortunately, Wiggins does not explain the nature of such a misconception of empiricism.)

[19] Quine (1980, 143): 'The general idea of strict modalities is based on the putative notion of *analyticity*'; cf. Quine (1960, 195-96; 1980, 23-37; 1966, 169). (Quine (1960, 55, 65-69) employs the notion 'stimulus-analytic'; a notion which in turn employs the notion of dispositions.) The interdependence of the putative notions of analyticity and necessity is undermined if, as Kripke maintains, there are non-analytic necessities. This is the case regardless of whether such necessities are properly construed as necessary truths.

faculty pertaining to (allegedly) necessary truth or to the justification of the analytic/synthetic distinction: all our cognitive faculties are answerable to the tribunal of experience and there is, therefore, no necessary truth and no legitimate analytic/synthetic distinction.

Quine holds that necessity is not scientifically respectable since it commits us to empirically unrevisable truth and it is incompatible with the language of canonical science.[20] According to Quine, that language is extensional, whereas modal contexts are non-extensional: 'referential opacity afflicts...the so-called *modal* contexts "Necessarily..." and "Possibly...", at least when those are given the sense of *strict* necessity and possibility as in [C.I.] Lewis's modal logic' (1980, 143).[21] Quine has it that there is a trade-off between instrumental validity and problematic status in point of epistemology: e.g., in the case of our postulation of physical objects (1980, 44). In the case of necessity, however, there is no such instrumental validity to be had precisely because necessity involves commitment to the *a priori* and the *a priori* is in conflict with global pragmatic utility. Quine is correct to link modality with the *a priori*: the *a priori* is pertinent to all modal knowledge. (However, it is a mistake to identify all necessity with analyticity.) Since the *a priori* is implicated in all modality, the philosopher who wishes to preserve modality against the Quinean attack must tackle that attack at its source by defending the thesis that there is a class of *a priori* knowledge, or that there must be some such class if our scientific practice, broadly construed, is to function. Successful argument to this effect constitutes a necessary but non-sufficient condition for the defence of modality against the Quinean attack: it must also be shown that modal notions will feature significantly in that class of *a priori* knowledge. The meeting of these conditions is sufficient to defeat the Quinean attack: arguments which serve to fulfil these conditions will be endorsed later.

One way in which the epistemological difficulties associated with modality can be circumvented is by the adoption of an irrealist approach to modal discourse, such as that advocated by Blackburn. The epistemological difficulties which arise within the rubric of the truth-conditional approach (in which realism, reductionism and eliminativism participate) do not arise on an irrealist account. On Blackburn's quasi-realist projectivist account, 'the propositional behaviour of the commitments—the reason why they become objects of doubt or knowledge, probability, truth or falsity' is explained on the basis of 'a theory of the mental state expressed by the commitments in the area in question' (1986, 122). In the next chapter I will argue that there is a significant class of modality, namely

---

[20] As has been noted, Quine is prepared to admit the adverb 'necessarily' when it relates to natural necessity, but he construes this (1966, 51) as conveying no more than regularity.

[21] Quine's attribution of referential opacity to modal contexts is criticized by Wolfram (1975) and Millican (1993), both of whose arguments rest upon the premise that definite descriptions can have purely referential occurrence. I take that premise to be implausible, and indeed untenable, in view of my support for a broadly Fregean distinction between sense and reference (see Chapter 4). Nevertheless, not all modal contexts are intensional: I will illustrate that referential opacity afflicts only modality *de dicto*.

modality *de re*, for which this approach cannot account. Also, as I will try to show later in this chapter, that class of modality is not as epistemologically problematic as its critics have maintained.

One realist strategy in the face of epistemologically motivated anti-realism is to argue that, however serious an epistemological problem a realist metaphysic of modality might present, the recognition of such a problem neither necessitates nor renders desirable a rejection of the metaphysical position subject to epistemological concern. Epistemological qualms, although they may be serious, are not sufficient to undercut our metaphysics. The realist may attempt to outweigh the kind of scepticism which would reflect back upon our metaphysics by emphasizing the benefits of realism and the theoretical drawbacks of the opposition which might be even more serious than the troublesome epistemology of modality. If there is serious incoherence or outrageousness in the opposing theories, then this will count in realism's favour, even if realism gives rise to problematic epistemology. This appears—although not unambiguously—to be the strategy adopted by McGinn in defence of his own realism. McGinn does not attempt entirely to resolve the problem, but to give it a thorough exposition, showing what is at stake by means of analogy. Thereafter, he seems to admit to a certain perplexity in the face of the problem. He wants to illustrate that modality is, in some important respects, akin to mathematics. His aim is to illustrate what marks out modality as epistemologically problematic in a way which is distinct, for example, from the epistemological status of theoretical entities postulated in science. It also emerges on McGinn's view that for the Humean empiricist, modality *de re* should be no more—and no less—epistemologically problematic than mathematics. The challenge to the realist about modality *de re* and to the Humean empiricist alike, is to provide a plausible epistemology for those species of knowledge in which the *a priori* is held to have an important role.

The strong connection between modal knowledge, including *de re* modal knowledge, and the *a priori* is set out by McGinn (1981, 180). In order to give rise to 'transempirical truths', a 'theoretical construction' must meet the conditions that it is realistically construed and that its introduction into or removal from an empirical theory neither increases nor lessens the empirical content of the theory. (This latter condition, 'conservativeness', is an adaptation of a notion employed in Hartry Field's work on mathematical theories.) For McGinn, a theoretical construction has transempirical status if it is based on neither direct nor indirect observation (including argument to the best explanation, as in the case, for example, of theoretical entities). The point for McGinn is that modal constructions are akin to mathematics, and contrast with theoretical entities, in that modality is transempirical in the sense outlined.

McGinn (1981, 181) writes that in the case of a theory *T*, free of modal expressions, and a set of causally modal constructions *V*,

> *T* ▤ *V* is a conservative extension of *T*: in particular, *T* ▤ *V* has no empirical consequences not shared by *T*. So modality, like mathematics,

> is empirically conservative. The reason is obvious: empirical consequences are reported by sentences which can be observed to be true, but what is non-actual cannot be observed to be true...So, by the conservativeness of modality, removing the modal component from an empirical theory does not decrease empirical content. In fact, this is just the point which has seemed to empiricists to lend such support to a constant conjunction conception of laws: viz., that the extra assertoric content alleged by the necessitarian about laws must transcend what we can empirically verify.

McGinn (1981, 183) states that we could not arrive at a theory with modal content purely by means of empirical observation and that 'there is a clear and important sense in which *all* specifically modal knowledge is *a priori*'. This is set against the background of the claim, provoked by consideration of Kripke's discussion of *a posteriori* necessities, that

> we come to know that a certain empirical statement is necessary by inference from a pair of premisses: the first is the non-modal empirical truth which we know by ordinary *a posteriori* procedures; the second is a conditional, affirming that if the concept in question applies to a sequence of objects then it does so necessarily, where this conditional is known *a priori* by reflection on the concept in question. *Modus ponens* delivers the modal conclusion. (1981, 157-158)

For example, upon the basis of the empirical discovery (say via the scientific analysis of blood samples) that Jill is the daughter of John and the conditional that if x is the (biological) daughter of y then x is necessarily the daughter of y, we arrive at the *de re* modal conclusion that Jill is necessarily the daughter of John.

McGinn offers a conceptualist account of the modal premise in such arguments. That is the sense in which all 'specifically modal' knowledge can be characterized as *a priori*, even when the truth of a modal statement is arrived at *a posteriori*.

McGinn's modal realism is 'Tractarian', i.e., he believes that modal statements must feature in 'a complete and ultimate description of reality' (1981, 170). In addition, his metaphysical standpoint is essentialist. This essentialism is evident in his endorsement of the principle that 'something is a genuine individual only if...its properties partition (non-trivially) into the essential and the accidental'. Given that McGinn's position is anti-reductionist and essentialist and that he offers a conceptualist account of modal knowledge, it is clear that his discussion constitutes a conceptualist realist account of modality.[22]

The real problem for the empiricist, which was at the forefront of Quine's criticism of traditional empiricism, and of which McGinn makes mention, was how

---

[22] Cf. the discursively defended conceptualist realism of Wiggins (1980, Chapter 5).

the empiricist can accept the *a priori* at all. McGinn (1981, 181) argues that modality, like mathematics and unlike theoretical entities, cannot be epistemologically established via argument to the best explanation, and that

> If this is correct, the liberalized empiricist can insist upon the non-empirical nature of modality while not simultaneously and unwantedly excluding statements whose epistemological credentials he finds (or should find) acceptable [relating, e.g. to theoretical entities]. But now if modality is thus non-empirical and if modal realism *is* (as I have claimed) true, then this insistence immediately refutes empiricism, be it ever so attenuated... (1981, 182)

The relevant 'liberalization' of empiricism involves the inclusion of a broad notion of indirect observability, including argument to the best explanation, but (presumably) a denial of the existence of *a priori* knowledge. The sort of empiricism envisaged here by McGinn is inconsistent with Humean empiricism. On McGinn's account it emerges that the problem of modal knowledge is no more and no less acute for Humean views (which seek to uphold the legitimacy of a class of *a priori* knowledge pertinent to *de dicto* modalities) than it is for realism about modality *de re*.[23] The problem of modal knowledge confronts equally the 'empiricist' who wishes to retain logical modalities and the exponent of irreducible and real modality *de re* (i.e. the essentialist). If McGinn's account is correct, *de re* modality does not fall foul of Hume's fork and versions thereof, so long as interbreeding between the species of reasoning/knowledge is not debarred. (It would then seem that the Humean empiricist really has no legitimate grounds for epistemological qualms specific to modality *de re*.) The epistemology offered has it that *de re* modal knowledge comes about via inference from modal major premise and empirical minor premise. On McGinn's account, the epistemological problem associated with modality boils down to the problem of how there can be *a priori* knowledge. If the *a priori*/*a posteriori* distinction can properly be upheld by the empiricist then, on McGinn's account, there is no epistemological problem specific to modality, since the 'problem' of modal knowledge just is the 'problem' of *a priori* knowledge. If we accept the type of conceptualist realist account of modal knowledge *de re* advanced by McGinn, and if the empiricist is in a position to explain claims to knowledge where the nature of the subject matter cannot be accommodated by a (liberalized) causal model of knowing, then there should be *no* problem of modal knowledge. If the empiricist is in no such position then the choice which confronts the truth-conditional theorist of modality is between thoroughgoing Quinean empiricism and the acceptance of modality, and thereby the *a priori*, as legitimate, albeit epistemologically problematic. The theorist must

---

[23] Whether McGinn is successful in his stated aim of explicating such a realist view need not concern us. Divers (1990, Chapter 7; 1992) rightly contests McGinn's assumption that upholding modal-actual supervenience (without reduction) is, as Divers (1992, 99) puts it, 'constitutive of' modal realism.

either seek to eliminate modality or admit that it may be epistemologically problematic, but that modalizing has to be preferred over eliminativism. The proceeding section will endorse the view that the problem associated with modal eliminativism, namely its incoherence, is much more serious than any problem which might attach to the *a priori*, and accordingly to logical modality and metaphysical modality *de re*.

McGinn points to an unresolved issue relating to the reconciliation of our metaphysics with our epistemology. On the one hand we have the difficulty of establishing that there is genuine knowledge *a priori*; on the other we have the problem that even if there is, how is it to be explained, given that we cannot explain it causally?

> The epistemological problem with modality is...that we cannot represent modal facts as causally explaining our knowledge of them. And the trouble with this is that we seem to have no other going theory of knowledge. We thus reach the uncomfortable position of agreeing that there is *a priori* knowledge but not understanding how such knowledge comes about. And this, it seems to me, is the form that the problematic epistemology of modal realism takes....My own view is that we are here confronted by a genuine and intractable conflict between what our metaphysics demands and what our epistemology can allow. (1981, 185)

McGinn's account appears to suggest that there may be a need to reverse one of the central characteristics of modern philosophical method, stemming from its Cartesian heritage, namely the maintenance of epistemology as prior to metaphysics. If the demands of any coherent empiricist approach will require adherence to modal eliminativism then anyone who finds modal eliminativism implausible may have to turn the philosophical clock back by awarding priority to metaphysics over epistemology.[24] (I am not suggesting that an epistemology for the *a priori* and modality cannot be found, but merely that the impossibility of eliminativist positions being correct entails that epistemological qualms should not take precedence over sound ontology.) The desire to revert to pre-Cartesian methodology is no doubt attractive to any philosopher who shares the predilection that the world is ontologically prior to our knowledge of it, and the accompanying belief that the metaphysics to which epistemologically-oriented methodology often leads—which awards not just epistemological but ontological priority to

---

[24] Although the maintenance of epistemology as prior to metaphysics is a central feature of empiricism, it was inherited from Descartes's methodology. Thus, like the two dogmas criticized by Quine, it has its origins in rationalist thought. It is characteristic of non-empiricist philosophies to deem something other than epistemology (typically metaphysics or logic) to be 'first philosophy'. Regardless of whether there need be a first philosophy, philosophers through the ages have tended to operate as if some area of philosophical study had priority over others.

epistemological atoms, qualities and the like over substances—is ill-advised. Of course, this predilection has to be supported by argument if metaphysical realism is not simply to be assumed. A more direct approach to the relation between modal metaphysics and modal epistemology, involving the *justification* of the conceptualism suggested by McGinn, is available.

Outline of an Approach to Modal Epistemology

The following argument encapsulates a line of thought to be further supported later in this chapter.

(1). In practice we employ axioms concerning modal notions.[25] These include examples employing *de re* forms, e.g., (a) for any thing *A* and any activity, *x*-ing, if *A* is *x*-ing/*x*-ed then it is/was possible for *A* to *x*.[26] These axioms, and the deductive principles governing argument forms in which they may feature, such as *modus ponens*, are 'normative with respect to reasoning'.[27]

(2). Unless we eschew the very notions of possibility and necessity we must accept some such axioms, since they govern the meanings of the notions. The provision of a (not necessarily formal) logic for modal notions is a necessary condition for their possession of cognitive content. (The fact that this condition is met suggests that even if, as the projectivist has it, modality is a matter of our adopting modal attitudes, such attitudes, unlike, e.g., aesthetic attitudes, are subject to rules of a sort which can be formulated fairly straightforwardly.[28])

(3). Eschewing modal notions is not an option, since the practice of deductive reasoning both relies upon and employs them.[29] Even arguments in which the modalities do not overtly feature rest upon the modalities, because the whole practice of reasoning from suppositions rests upon the notion of logical necessity.

(4). The denial that the possibility of *p* entails *p* or that the possibility for *A* to *x* entails that *A* *x*s is symptomatic of an understanding of the notion of

---

[25] E.g., if it is the case that *p* then it is possible that *p*; if it is necessary that *p* then it is not possible that not *p*.

[26] Much of what I write in this section rests upon the assumption of an account of the form of *de re* constructions which I will defend in greater detail in Chapters 3 and 4.

[27] I borrow the phrase from Haack (1978, 238). Cf. the combination of the thesis of normativity adopted in (1) and the cognitivism adopted in (4) with the 'weak psychologism' about logic suggested by Haack (1978, 238-242).

[28] The fact that the condition is met is seen, for more than one reason, as a threat to the projectivist's project, as will emerge in Chapter 3.

[29] That practice, in turn, is indispensable to science (broadly or narrowly construed). This emerges from accepting Wright's argument for the indispensability of the *a priori* to the functioning of empirical theories, McFetridge's argument for the indispensability of logical necessity, and the further premise, (5) below, that logic is an *a priori* science. The arguments of Wright and McFetridge are expounded later in this chapter. Contrary to Quinean empiricism, there must be some deductive principles immune to empirical revision.

possibility. Someone who regards the objective possibility of something as entailing that it actually pertains clearly has a defective understanding of the notion of possibility.[30] Modal axioms are proper objects of knowledge and ignorance. (At the very least, the layman and the logician talk as if they had cognitive content. The onus is on the non-cognitivist to provide us with an acceptable explanation of such talk and of the ordered nature of our use of the notions at issue.)

(5). Since deductive reasoning cannot (primarily) be justified via, and does not require justification via, empirical means, modal axioms and deductive principles have purely *a priori* status.[31] (Where I attribute 'purely *a priori*' status to something I do not mean to rule out the possibility—indicated by Kripke—that it can ever be known *a posteriori*. Rather, I suggest that, if it can properly be regarded as an object of knowledge, the fundamental form of justification for it is extra-empirical.[32] In addition, my concern is with the cognitive faculties of human beings.[33])

---

[30] The objective modalities are those which are unrestricted by ignorance and belief.

[31] Cf. McGinn (1976, 199-200) and Peacocke (1993, 185) on the *a priori* status of logic.

[32] Cf. McMichael (1986, 37): '*A priori* knowledge is distinguished from *a posteriori* knowledge not because it can arise in the total absence of experience...but rather because experience does not constitute an *evidential* basis for it'. Also, cf. Pap (1958, 126): 'What marks a proposition as a priori is...that the only kind of cognitive activity which we admit as appropriate to its validation is conceptual analysis and deduction—the "mere operation of thought".' Even if there are purely *a priori* items the truth of which can be known *a posteriori* (e.g., via an expert's report) this does not conflict with the claims of McMichael, Pap and myself. According to Wright (1980, 110): 'Arithmetical equations certainly are strongly borne out by experience. If an explanation is to be available of why we give them the extra "dignity" of a rule...it is surely that more than experimental corroboration of them is possible.' My claim is that appeal to experience is irrelevant to the fundamental justification of modal axioms and deductive principles. Wright's Wittgenstein agrees (1980, 329-330) that deductive inference 'could not typically' be 'inductively supported', but assigns *purely* normative status to logical '"statements"'.

[33] Cf. Kitcher (1980, 90-91; 1984, 26, incl. n. 16) who comments that, in characterising the *a priori*, we are interested only in the cognitive faculties which human beings actually possess, not in those which they possess in other possible worlds. Thus, my '*a priori*' compares with Hirsch's '*a priori* in the narrow sense' (1986, 245): 'A truth is knowable *a priori* in the narrow sense if it is metaphysically possible that we (human beings) should know this truth *a priori*, i.e., that we should know it purely on the basis of our understanding and reasoning.' This is so long as metaphysical possibility is interpreted as *de re*, notwithstanding Hirsch's own contrasting of the metaphysically necessary with the contingent (1982, 228) and his description of metaphysical necessity as concerning statements which hold 'in any counterfactual situation' (1982, 229). Given that any humanly useful *a priori*/*a posteriori* distinction will involve relativity to human cognitive faculties and that these faculties involve irreducible modality *de re* it seems that the empiricist will be ill-placed to retain the distinction while rejecting the modality. This opens up a path to the incoherence of the Humean empiricist's denial of modality in nature. In addition, it illustrates Quine's fundamental insight that the theoretical apparatus of the orthodox empiricism of his day cannot be sanctioned by a pure empiricist epistemology.

It may be concluded, then, that there is a class of purely *a priori* modal knowledge.[34]

Neither (3) nor the argument compels us to accept *de re* modal notions. (Unless, that is, the *de dicto* is a special class of the *de re*: in such a circumstance the indispensability of non-*de dicto* modal notions remains unestablished). We are compelled to accept *de dicto* modal notions since they are essential to the practice of reasoning from suppositions. Although *de re* modal notions feature in our *actual* reasoning practice they are unessential to *the* practice of reasoning from suppositions, unless the *de dicto* is a species of the *de re*. Nevertheless, with respect to the *de re* modal notions, the argument is intended to furnish an epistemology, not to establish their indispensability.

If the above argument holds—and I will support it further in the next section—then it lessens the impact of (particularly Quinean) empiricist sensibilities where the modalities are concerned. Unlike McGinn's comments on modal epistemology, the dialectic of the argument is that much of the tension that there might be is, fundamentally, between logic and epistemology, not metaphysics and epistemology. The argument suggests that the requirements of our deductive practice have priority over an epistemology dominated by hard-edged empiricism. (Since we need the modalities and knowledge of modal notions is *a priori*, a philosophy which outlaws the *a priori* must be deemed unsatisfactory.) Nevertheless, the argument has a metaphysical pay-off in that it helps to establish the epistemological respectability of modal attributions *de re*, thereby diminishing the force of some standard objections to *de re* modality.

Empiricists have tended to be less than careful about distinguishing between the logico-grammatical respectability of modal attribution *de re* and the acceptability of the metaphysics of essentialism. Although the main Quinean objection to the former is in terms of its purported lack of intelligibility, its source might still be said to be epistemological, even to the extent of such talk of a lack of intelligibility being viewed as rather disingenuous. The empiricist is committed to the view that the natural realm and the realm of necessity are entirely detached. For the empiricist, as for Wiggins's anti-realist conceptualist (1980, Chapter 5), there are no modalities in nature. Whatever else this is, it is a metaphysical thesis. It is adhered to by the empiricist because the empiricist cannot see how its denial can be reconciled with the empiricist's epistemology. It seems to me that it is this

---

[34] The argument just given has affinities with McFetridge's argument for the indispensability of logical modalities: the former will be bolstered by consideration of the latter in the next section. Schlick denied that *a priori* propositions are factual and described them [1932a](1979, 170) as 'expressions which have nothing to say, they bring no knowledge'. In so doing, however, he did not express non-cognitivism, since he regarded the classifications *a priori* and analytic as applicable to true propositions: see e.g., [1932a](1979, 162-163). Rather, in describing the *a priori* as non-factual, he means to suggest that no *a priori* proposition says anything about the world as studied by natural science and that *a priori* propositions, which he mistakenly takes always to be obviously true, are uninformative: i.e., that they do not *bring* knowledge does not entail that they are not known.

epistemologically-motivated metaphysical thesis which is at the heart of empiricist denials of the intelligibility of modal attribution *de re*. I think that the plausibility of my claim is strengthened by the empiricist's customary failure to make the distinction mentioned at the start of this paragraph.[35]

Examples such as (a)—for any thing *A* and any activity, *x*-ing, if *A* is *x*-ing/*x*-ed then it is/was possible for *A* to *x*—hold of necessity. Although they concern *de re* modalities they are necessarily true. Knowledge of modal axioms is purely *a priori*. Substantive *de re* modal knowledge, in contrast, is not purely *a priori*. (As I employ the term 'substantive' I intend it to convey concreteness. Substantive modalities *de re* are those which relate to the essences of concrete entities.) Substantive *de re* modal knowledge comes about by inference from axioms concerning *de re* modal notions, such as (a), and empirical premises.[36] As McGinn suggests, the factual content of theories employing *de re* modalities outstrips that of (putatively) unmodalized theories, whilst the theories themselves are empirically equivalent. This presents no metaphysical or epistemological problem unless there are unsettled questions about the possibility of *a priori* knowledge which are sufficiently serious to undermine our practice: this is very unlikely to occur, for the following reason. The proponents of any epistemological worries which may be raised in this regard will themselves require to employ the very principles central to our practice upon which they cast sceptical aspersions. The practice of philosophizing rests upon the ability to reason, so philosophers cannot intelligibly ask questions about our practice of reasoning from outwith that practice itself.[37]

There are differences in the modal statuses of possibilities and necessities themselves, which ought to be reflected in modal epistemology. These differences are important to metaphysics, but tend to be overlooked both in discussions of the epistemology of modality and in discussions of modal metaphysics which rely upon the axioms of systems of modal logic in inappropriate contexts. The differences have a significant bearing on the epistemological issues. Substantive *de re* possibility, unlike merely logical possibility, is an aspect of actuality. Thus, although metaphysical necessities and possibilities cannot be established merely on the basis of observation, our knowledge of substantive modality *de re* is evidentially constrained. Where merely logical modalities are concerned evidential constraints play no direct, fundamental or important epistemological role. That

---

[35] In a departure from tradition, the self-proclaimed 'neo-empiricist' Sidelle (1989, 73-74 and *passim*) makes the distinction and his whole account requires it, since he seeks to show that the empiricist can feast at the table of modal attribution *de re* without rejecting the thesis that there are no modalities in nature.

[36] In commenting on Hegel's notion of real possibility, Burbidge (1992, 44) writes: 'Real possibilities are *actual* conditions. Each one is an actuality as well as a possibility.' This conveys the idea that there are actual facts involving real possibilities. The modal epistemology I endorse captures this idea.

[37] Cf. the interpretation of Wittgenstein's rule-following considerations adopted by Dancy (1985, 76-82 and esp. 210-211).

which does not admit of *a priori* justification and is known *a posteriori* is logically contingent. This points to the necessity for carefulness in the application of the axioms of formal systems such as the axiom of S5 that if it is possible that *p* then it is necessary that it is possible that *p*.[38] Now, the empirical premise that *A x*s, and the non-empirical premise that actuality implies possibility,[39] produces the results that: (b) it is possible for *A* to *x*, and (c) it is possible that *A x*s. In accordance with the S5 axiom, it follows from (c) that: (d) necessarily, it is possible that *A x*s. The modalities relevant to the axiom and to (c) and (d) are broadly logical possibility and necessity, not substantive *de re* possibility and necessity. Although knowledge that something is actual entails that some formulation relating to it is logically possible, actuality does not evidentially constrain the logical modalities, since the logical modalities are not objects of substantive modal knowledge, but merely of notional modal knowledge. (I intend 'notional modal knowledge' to denote knowledge of modal concepts. Knowledge of modal concepts *per se* does not involve concrete entities, unlike substantive modal knowledge *de re*. If the *de dicto* is a subspecies of the *de re*, then there is a class of modal knowledge *de re* which is not substantive in the foregoing sense.) Knowledge of those modalities is purely *a priori*, and what merely happens to be true of actuality, i.e., that which is contingently true, does not have any direct, fundamental or important evidential relationship with logical possibility and necessity. Knowledge that (b) is related to the nature of actuality. In contrast, the circumstances of my example notwithstanding, since the possibility or necessity of a *dictum* requires no empirical warrant, and is fundamentally justified via *a priori* means, (c) and (d) have purely *a priori* status. Knowledge of (b) does not entail that (e) it is necessary that it is possible for *A* to *x*: this is where care has to be taken so as not to misapply the axiom. Knowledge of (b) does entail that there is nothing in the nature of *A* which precludes it from *x*-ing. Knowledge of (b) thus provides indirect knowledge of the essence of *A*. Where substantive possibility is concerned it is a contingent matter as to what possibilities there are: where merely logical possibility is concerned it is not a contingent matter as to what possibilities there are.[40] In view

---

[38] An example of a discussion which is not careful in this regard is that of Bradley (1992, Chapters 4 and 5). He claims, for example, that 'we have many good and powerful reasons for holding that *any* modal ascription, if true, is necessarily so' (1992, 183). This is despite his insistence (1992, 176) upon the non-equivalence of *de re* and *de dicto* modal attributions.

[39] There are *de re/de dicto* subtleties here: (i) If *p* is actual (i.e. true) then it is logically possible that *p*; (ii) If *A x*s then it is possible for *A* to *x*; (iii) If *A x*s then it is logically possible that *A x*s. (i)-(iii) stem from the general (unsubtle) principle that actuality implies possibility, although the result obtained in (ii) is quite different to that obtained in (i) and (iii).

[40] Contrast David Lewis (1986, 111) who claims that 'what possibilities there are' is a non-contingent matter. Contrary to his claim, metaphysical possibilities *de re* pertaining to concrete entities are not possibilities of a kind which can properly be qualified, in the manner of S5, by a sentential necessity operator. (Lewis does not state that his claim concerns only logical modalities.)

of the contingent status of substantive possibilities, the attempt to argue that no modal knowledge is subject to causal constraint fails. Nevertheless, even *de re* modal knowledge fails to secure the status of being a species of knowledge which can be accounted for on a purely causal model of knowing. This is indicative of the poverty of such an epistemology, rather than the epistemological profligacy of modality.[41] There are many varieties of knowledge which cannot be accounted for on a strictly causal model due to the non-spatial/non-temporal nature of their subject matter.[42] A case central to this study is that of abilities, which, as Kenny (1989, 27-28, 72-73) indicates, are not spatially located, unlike the entities in which they inhere. (To adapt Kenny's example, one cannot point to the key's ability to open the lock, although one can point to the vehicle of that ability.) Neither, of course, are abilities abstract objects: a broadly Aristotelian account of modality *de re* has the virtue that it does not, as Kenny again indicates (1989, 72), hypostatize possibility and necessity.[43] The behaviour of an entity manifests its abilities, although our recognition of those abilities is mediated by *a priori* axioms and rules of inference rather than directly perceived. The vehicle of an ability, unlike the ability itself, can often be recognized, although not necessarily *qua* vehicle of the ability, in the absence of any such mediation. The identification of a particular physical aspect of a thing as the vehicle of a given ability is a matter for empirical science.[44]

Kripke has influentially rejected the thesis, supported by logical positivists such as Ayer, that the necessary, the knowable *a priori* and the analytic are co-extensive. Kripke protested that the necessary/contingent distinction, in contrast to the *a priori/a posteriori* distinction, is one of metaphysics, not of epistemology. I think this unfortunate, since the necessary/contingent contrast is more properly described as logical: metaphysical necessity is not logical necessity, and what is metaphysically necessary is—or at least is often—contingent.[45]

---

[41] Cf. Divers (1990, 160-164).

[42] Aside from familiar examples such as mathematical knowledge, Divers (1990, 161-163) indicates that a purely causal epistemology cannot even account for perceptual knowledge of secondary qualities.

[43] It is noted by van Fraassen (1980, 3) that 'empiricists have always eschewed the reification of possibility (or its dual, necessity). Possibility and necessity they relegate to relations among ideas, or among words, as devices to facilitate the description of what is actual'. Such anti-realist positions, however, have no monopoly on the rejection of the reification of modality. Indeed, the realist primitivism I adopt is steadfastly opposed to such reification.

[44] Cf. Kenny (1989, 74).

[45] McGinn (1976, 195) follows Kripke in referring to 'concepts of metaphysical modality, *viz.*, necessity and contingency'. I will argue for the distinction between logical and metaphysical modality in the next chapter: it is already suggested by the previous paragraph. I believe that Kripke in fact accepts this distinction but that he is less than careful when it comes to observing the distinction. This issue is discussed in Chapter 4.

Knowledge of essence is not—or at least is not always—knowledge of logical modality. McGinn claims, after Kripke, that:

> It is very plausible that, at least for the strict modalities, knowledge of the modality of a given sentence is arrived at *a priori*. This is pretty evident for sentences whose truth (as distinct from their necessity) is known *a priori*, but it also seems to hold for necessary *a posteriori* sentences, e.g., statements of natural kind, composition, identity and origin....we come to know that a certain empirical statement is necessary by inference from a pair of premisses: the first is the non-modal empirical truth which we know by ordinary *a posteriori* procedures; the second is a conditional, affirming that if the concept in question applies to a sequence of objects then it does so necessarily, where this conditional is known *a priori* by reflection on the concept in question. *Modus ponens* delivers the modal conclusion. (1981, 157-158)

Thus, McGinn claims that substantive modal knowledge, i.e. knowledge pertaining to the natures of concrete entities, concerns the modality possessed by sentences and that there are paradigmatically *a posteriori* necessary truths.[46] But this cannot provide a viable epistemology for substantive modal knowledge, because it distorts the nature of the modality involved. A substantive modal truth is not identical with any necessary truth. Substantive modal knowledge is not, *contra* Kripke and McGinn, knowledge of the modality of any linguistic or metalinguistic item.[47] It is clear that the modalities do not function solely in the manner required by McGinn's account (i.e., as sentential operators): the modal term in (b) (it is possible for *A* to *x*) does not qualify (b), or any other (meta)linguistic item, at all.[48] So, contrary to McGinn's suggestion, knowledge of substantive modalities *de re* is not, and cannot be, 'knowledge of the modality of a…sentence'. McGinn (1976, 204) has it that:

> To claim that we have *a posteriori* knowledge of essence might be to claim *either* that there are necessary truths whose *truth* we know *a*

---

[46] Cf. the account of Kripke given by Gibbard (1975, 187).

[47] Cf. Wiggins's criticism (1974) of Kripke's metalinguistic account of essence. The distinction between a necessarily true statement and a true statement of *de re* necessity emphasized by Wiggins pervades my account of modality. The Kripkean error is perpetuated by McMichael (1986) the whole dialectic of whose discussion rests upon construing essentialist necessity as attaching to propositions. Witness his misrepresentation (1986, 37) of essentialism thus: 'Essentialists claim the necessity of singular propositions that cannot be transformed, by analysis, into logical truths.' Cf. Casullo's comment (1977, 154) that if there are essential properties then not all necessary propositions can be known *a priori*. I dispute the view that essentialism undermines the thesis that all (humanly) knowable necessary propositions are knowable *a priori*.

[48] Cf. Chapters 3 and 4 on the *de re/de dicto* distinction.

posteriori (there being no other way), *or* that there are necessary truths
whose *necessity* we know *a posteriori*.

In accordance with my account of substantive modal knowledge *de re*,
McGinn's claim is false. Knowledge of metaphysical modalities *de re* pertinent to
concrete entities accords with neither of the options mentioned by McGinn.
McGinn (1976, 204) claims that:

> The ambiguity can be removed by attending to matters of scope: the true
> statement 'we can know *a posteriori* of a necessary truth that it is true'
> is different from and does not imply the (I think) false statement 'we
> can know *a posteriori* of a necessary truth that it is a *necessary* truth'.

In fact, McGinn has not shown there to be *any* genuine species of necessary truth
of paradigmatically *a posteriori* status.

According to the official logical positivist view, the world and the realm
of necessity are detached. Necessity is identified with analyticity and only the
analytic is held to be knowable *a priori*. Kripke (1980, 38) points out, quite
rightly, that '"necessary" and "*a priori*"...as applied to statements, are *not* obvious
synonyms' and he argues, against the logical positivist position, that the terms are
not even co-extensive. The conclusion that the terms are not co-extensive, even
when restricted to statements, is correct. However, the examples of *a posteriori*
necessities which are provided by Kripke do not constitute genuine examples of
necessary *statements* at all. I admit that there are genuine *a posteriori* necessities,
but I deny that they give rise to necessary *a posteriori* statements.

Kripke's account of the epistemology of (purportedly) essentialist claims
is illustrated by the following example. We know empirically that a table before us
is made of wood. We know, by reflection, that this table cannot be made of ice.
Kripke's account is accurately depicted as follows.[49] Where *p* states that this table
is wooden, and *q* that it is not made of ice, we know empirically that *p*; we know
extra-empirically that if *p* then necessarily *q*; we know by *modus ponens* that
necessarily *q*.[50] Let us grant that knowledge of a necessity is illustrated by the
Kripkean example. The knowledge of that necessity is held to be *a posteriori* since
it is derived, via an *a priori* conditional, from an empirical, and thereby *a
posteriori*, premise. The argument allows and, as it stands, requires that substantive
empirical fact bears upon the epistemology and metaphysics of necessary truth. My
premises (1) and (5) above allow for *de dicto* necessities of purely *a priori* status
concerning *de re* modal notions. This provides a means of securing an alternative
to the Kripkean argument. Although truths concerning *de re* modal notions hold of
necessity, inferences in which such a truth and an empirical truth feature need not

---

[49] After Dancy (1985, 219-220), who employs the logical necessity operator in his
exposition of Kripke's view.

[50] Cf. McGinn (1981, 157-158), quoted above.

result in necessary truths. Examples such as the premise that if water has a certain chemical formula it has that formula necessarily may thereby be disambiguated such that if water is H_2O then it is necessary for water to be H_2O, but it is not necessarily true that water is H_2O (i.e. the statement that water is H_2O is not possessive of truth in all logically possible worlds).[51] On the account just offered the contingency of that which is established by methods which essentially include the empirical is not sacrificed.[52] The Kripkean rejection of the thesis that the necessity that *p* (and *p*'s being knowable) entails that *p* is knowable *a priori* is ill-founded.[53]

When we know, on the basis of empirical premise, *a priori* premise and inference, that it is possible for a thing to participate in an event of a given kind we have indirect knowledge of its nature: we know that there is nothing in the nature of the thing which rules out such possibility. How do we tell when, or whether, it is necessary for a thing to initiate a particular type of event, or to react in a certain way upon the exercise of some external influence? The distinction between those sorts of change through which an entity endures and those which constitute its destruction will bear upon such questions.[54] Metaphysical necessities *de re* relate to (at least) the non-deontic requirements of entities. It is plausible to suggest that we have defeasible knowledge of such requirements. We know, I suggest, that human beings (as distinct from persons) cannot survive decapitation. This is perhaps revisable, but in this and similar cases, non-modal knowledge (that human beings never survive decapitation) constitutes defeasible grounds for the modal claim (that they cannot).[55] (Compare the case of our knowledge that animals need food.) We might regard the conditional that if a thing is a fully developed human being then it is necessary for that thing to have a head as having the form of necessity-involving counterparts of possibility-involving examples such as the principle, (a) above, that for any thing *A* and any activity, *x*-ing, if *A* is *x*-ing/*x*-ed then it is/was possible for *A* to *x*. However, there is a crucial difference between

---

[51] Cf. Chapter 4, on the *de dicto* status of logical possibility. In fact, I do not hold that the major premise mentioned constitutes a necessary *a priori* truth: see below.

[52] Contrast: McGinn's view, quoted above; Kripke (1980, 159, cf. 40) where he conflates the essential/accidental distinction and the necessary/contingent distinction. Like Kripke and McGinn, Hirsch (1982, 228-229) construes metaphysical necessity as qualifying statements. In addition, he contrasts metaphysical necessity with 'a priori contingency'.

[53] McGinn (1976, 203-204) claims that the thesis is false since 'cases of *de re* necessity — necessity of identity, of constitution, of kind, of origin, *etc.*— seem counterexamples to it; none of these necessities could be known *a priori*'. My claim is that standard cases of *de re* necessity do not constitute counterexamples to the thesis at all, since they are not necessary truths. McGinn (1976, 205) claims that '*a priori* evidence is constant across worlds, because available without observation of the specific properties of each world'. Likewise, but contrary to his account, knowledge of necessary truths is *a priori* and available without observation of the specific properties of any world.

[54] See 3.2 on the metaphysics of essence and change.

[55] Cf. Shalkowski (1996, 387): 'The world sometimes confirms...our modal hypotheses.'

the two cases. The possibility conditional (a) is necessarily true: the necessity conditional, if true, is so contingently.

In my view, examples commonly provided as *a priori* modal major premises for use in arguments to substantive modal knowledge *de re* are neither *a priori* nor necessary truths. For example, I deny that the claims that the material composition of a material object at the time of origin is essential to the object[56] and that 'whatever the origins of any given human individual, they are essential to that individual'[57] are necessary *a priori*. Neither of these claims seems to me to be true in virtue of the notions it involves. So, I hold that *if* these claims hold they are themselves dependent upon empirical truths and more fundamental truths of a purely conceptual nature.[58]

It is fairly easy to come up with non-controversial *a priori* truths involving the notion of *de re* possibility. In contrast, many commonly provided *de re* necessity-involving major premises held to feature in arguments to substantive modal knowledge *de re* do not seem to me to be *a priori* necessities and it is not so easy to furnish non-controversial examples which merit that status. The notion of identity furnishes a truth which does, I believe, merit such status, although I do not claim that the relevant truth is non-controversial.

It is often held that there are no contingent identities. This position is defended by Ruth Barcan Marcus [1961](1993, 9), who holds that if *x* and *y* are identical then it is logically necessary that *x* and *y* are identical. (The formal version of this claim is a theorem of her extended modal system QS4.) Marcus (1993, 9) claims that the conjunction of the assertion of the holding of an identity relation and the assertion of the logical possibility of its negation constitutes a contradiction. She includes identities involving concrete entities when she claims (1993, 12) that 'to say truly of an identity (in the strongest sense of the word) that it is true, it must be tautologically true or analytically true'.[59] The view that there

---

[56] Kripke (1980, 114 nt. 56). After Salmon (1979), Kripke (1980, 1) expresses doubt about his original claims about this claim.

[57] Peacocke (1997, 530), after Kripke (1980).

[58] For example, (j) below. For the record, I regard the principle of the essentiality of material origin as implausible because I do not think that the 'hunk of matter' from which a material object is originally composed is of its nature (i.e., explanatory with respect to its abilities). I grant that, as a matter of *a priori* necessity, it is of the essence of material objects to be materially constituted. I do not agree with the thesis that, for any material object, the matter of which it is actually composed at time of origin is of its essence. Cf. Anscombe (1953, esp. 93), which entails the rejection of the principle of the essentiality of material origin.

[59] Marcus (1993, 10) comments that, where 'I' stands for the identity relation, '*aIb*...doesn't say that *a* and *b* are two things that happen, through some accident, to be one'. Her claim is correct. However, the non-accidental nature of a relation does not, *contra* Marcus, secure the logical necessity of the claim in which it is expressed. We see here the importance of the under-appreciated distinction between accident and contingency. Although an identity relation involving a concrete object is no accident with respect to the object, the formulation in which it is expressed is no logical necessity.

are no contingent identities has unfortunate consequences which are indicative of its untenability. One such consequence is that it results in identity relations involving concrete entities, accurately described by Marcus (1993, 202) as 'metaphysical', being (purportedly) accounted for in terms which are *de dicto* rather than *de re*. In addition, it would seem that the view is entirely unequipped to cope with the platitude that concrete entities are contingent existents. Necessary truths do not depend for their truth upon that which just happens to exist in the actual world and, *contra* Kripke, cases of true essentialist attributions concerning concreta do not constitute counterexamples to the thesis that all necessary truths are purely *a priori*.

Unlike Marcus, Kripke does not identify concrete identities with tautologies and analytic truths since he regards the latter, unlike the former, as necessary *a priori* (1980, 39). Nevertheless, despite his admonition that we 'interpret necessity here weakly' [1971](1977, 68), his account has it that true identity statements in which objects are designated by proper names are necessary truths, albeit discoverable *a posteriori*.[60] Kripke (1977, 67) depicts the necessity *in* (as opposed to the necessary truth *of*) the thesis that 'every object...is necessarily self-identical' thus: $(x)\square(x = x)$.

This characterization of the necessity of the identity relation falls prey to some of the same criticisms as the account of particular concrete identities provided by Marcus. Identity is a relation of an object to itself.[61] So, where concreta are concerned, the necessity pertinent to that relation cannot be accurately explicated via the use of the sentential necessity operator.[62] There are necessary truths about the notions of identity and metaphysical necessity *de re*, but many identity relations hold contingently. It may well be a necessary truth, true in virtue of the very concept *object* that it is *necessary for* every object to be identical with itself, but this neither asserts nor entails the existence of any object in particular, much less the necessary existence of any object in particular. Nor does it misrepresent the embedded necessity as *de dicto* or logical. Thus, the statement that Hesperus is identical to Phosphorus is such that, if true, it sanctions a true statement of necessity *de re*, not, *contra* Kripke (1977, 89), a necessary truth. The

---

[60] Kripke (1980, 98) holds that 'descriptions can be used to make contingent identity statements'.

[61] Cf. Grossmann (1983, 170-172).

[62] This criticism applies equally to Kripke's representation (1977, 69, 67) of the thesis that 'for every *object x* and *object y*, if *x* and *y* are the same object, then it is necessary that *x* and *y* are the same object' as $(x)(y)((x = y) \square\bigcirc(x = y))$. Kripke claims that this thesis is about objects, not statements. Rather, the thesis that where an identity holds it holds of metaphysical necessity is a truth about the very notion of identity. The embedded notion of necessity is indeed of the kind which concerns objects: it has to be rendered *de re*. That objective is achieved neither by the informal employment of a *that*-clause—a classic symptom of *oratio obliqua*—nor by the use of a sentential necessity operator. For a truly *de re* version of the thesis see the main text below. Like Kripke, Davies and Humberstone (1980, 10; cf. Davies, 1981, 241) take it that all 'true identity statements using proper names' are necessary truths.

Barcan Marcus account cannot cope with the aforementioned platitude. According to Kripke (1977, 68), a statement is weakly necessary 'if whenever the objects mentioned therein exist, the statement [is] true'. The Kripkean might claim to cope with the platitude in view of the fact that weak necessity is hypothetical, not categorical. This, however, effects the abandonment of the thesis that there are non-contingent identities concerning concrete objects. In addition, it provides an incorrect semantics for modal attributions *de re* since it fails to convey their existential commitments.[63]

Another account of the modality involved in identity relations actively avoids the unfortunate consequences just associated with its rival.[64] Wiggins gives a *de re* adaptation of the Barcan proof of the necessity of identity (using a lambda abstraction operator and NEC as a *de re* necessity operator, in contrast to the logical necessity box employed in the original).[65] Crucially, Wiggins's account incorporates the distinction between 'a necessarily true statement' and 'a true statement of *de re* necessity' (1980, 110, cf. 214).[66] There is some ambiguity in Wiggins's account as to whether it is the *de re* necessity of particular identities which is not put forward as necessarily true, or whether it is the general statement that for all x and all y, if x is identical to y then it is necessary for x to be identical to y. In point of necessity Wiggins does not seem to disambiguate the two claims. Nevertheless, the latter makes no assertions concerning the existence of particular objects, is shown to be true by means of proof (i.e., is *a priori*), and is a true statement about the notions of identity and necessity *de re*. Accordingly, it does constitute a necessary truth, although the necessity it embeds is not of that character.

Wiggins's argument secures the truth of the following principle concerning identity and metaphysical necessity:

> if x is identical to y, then it is metaphysically necessary for x to be identical to y.

---

[63] E.J. Lowe has suggested to me that we may construe the claim that it is metaphysically necessary for Hesperus to be identical to Phosphorus as meaning that Hesperus and Phosphorus are identical in every world in which they exist. However, the truth conditions for statements of metaphysical necessity *de re* about concrete objects require the *actual*, or at least the *sometime actual*, existence of their subjects. This is not accommodated by the strategy suggested by Lowe. On the idea of actual existence, see Martin (1988, Chapter 3).

[64] Cf. Wiggins (1976, 301-303; 1980, 214).

[65] Wiggins (1976; 1980, 109-111, 214-215). Wiggins rails against 'the contingency theorist'. This terminology is rather misleading, since the opponent of that theorist holds that identity statements are expressive of necessity but need not hold that they are logically necessary. Stalnaker (1986, 137, 139 nt. 37) erroneously attributes the view that if $x = y$ it is necessary that $x = y$ to Wiggins. The thesis defended by Wiggins is an *alternative* to that attributed to him by Stalnaker.

[66] Cf. Mondadori (1995, 233) on the distinction.

Particular identity relations involving concrete objects cannot be explicated in terms of necessary truths. The denial, adhered to by Marcus and Kripke, of the contingent status of particular identities rests upon a failure to delineate truths in which the notion of identity is used from truths about that very notion. (The very expression 'the necessity of identity' is apt to foster this confusion due to its inherent ambiguity.) Wiggins's account allows for logically contingent metaphysical necessities and respects the purely *a priori* character of necessary truths. It thereby undercuts Kripkean tenets concerning necessary *a posteriori* truth, while allowing the strengthening of the general approach to modal epistemology adopted by Kripke by expunging from it a serious error. The resulting amendment to the Kripkean account is such that the idea that we can arrive at *a posteriori* modal truth, via *modus ponens*, from modal premises and empirical, non-modal premises is retained. Kripke's unfortunate view (1980, 159) that 'cases of the necessary *a posteriori*...cannot be contingently true' and 'have the same special character attributed to mathematical statements' is avoided.

It is a necessary *a priori* truth that (i) for all x and all y, if x is identical to y then it is metaphysically necessary for x to be identical to y.[67] This is consistent, however, with the tenet that identity relations concerning concrete objects hold as a matter of *logical contingency*, albeit metaphysical necessity *de re*. (i) is a truth about the notion of identity. Particular identity relations involving concreta are seen to constitute metaphysical necessities *de re* (contrast necessary truths) via inference from (i) and the empirical premise of the existence or, in Hesperus/Phosphorus-type cases, the identity, of the objects in question. So, (i) is an example of a *de re* necessity-involving counterpart of *de re* possibility-involving premises such as (a). Compare also the following principle: (f) if it is metaphysically necessary for As to x and this is an A, then this xs. This is a consequence of the general modal principle that necessity implies actuality. There is no difference in point of modal status or epistemology between (i), (f) and (a). I contend that these principles are *a priori* necessary truths and that, if they are true, understanding the notions with which they are concerned secures knowledge of their truth.

The fact that observation of a thing's actual behaviour yields, via (a) and *modus ponens*, indirect knowledge of its nature, since what is *possible for* a thing can only be that which its nature does not preclude, suggests the following principle:

---

[67] I am under no illusion that this is a non-controversial claim. I reject the view, e.g. of Gibbard (1975), that there are particular identities which are in no sense necessary. Gibbard's view rests upon the claim that if a statue and a lump of clay share all their non-modal properties they are non-necessarily identical. Since I hold, unlike Gibbard (1975, 201-206), that metaphysical necessity *de re* is typically extensional in nature, I deny Gibbard's claim: if x and y differ in terms of what is possible for them, then they are necessarily non-identical.

> (j) Necessarily, that which is necessary for a thing's having all its
> fundamental capacities (including its capacity to acquire
> whatever abilities it can acquire, regardless of whether it actually
> has them, but excluding its existence) is of the essence of the
> thing.

I propose (j) as an addition to the inventory of *de re* modal-notional truths fit to be regarded as instances of fundamental modal major premises in *modus ponens* arguments to substantive modal knowledge *de re*: i.e., I propose that it is necessary *a priori*. 'The vehicle of an ability' is characterized by Kenny (1989, 72) as 'the physical ingredient or structure in virtue of which the possessor of an ability possesses the ability and is able to exercise it'. (j) is intended to capture the idea that the fundamental vehicle of a thing's abilities is of the essence of the thing. (My being a human being is necessary for my possession of the totality of capacities and abilities I possess.) This is at one with the Aristotelian conception of essence as explanatory.[68]

The threat of anti-realist conceptualism—the idea that modality is all in the mind—arises with the ascription of *a priori* status to specifically modal content. Sidelle (1989) advances a broadly Kripkean epistemology for the necessary *a posteriori* which he sees as lending support to a conventionalist anti-realism about essence and modality *de re*. His epistemology is of the standard *modus ponens* form. He has it that all necessities ultimately owe their necessity to some analytic necessity. Sidelle (1989, 93) claims that the methods we employ 'for ascertaining knowledge of necessity are not methods for learning about the world'. However, as Yablo (1992) indicates, the epistemology advanced by Sidelle does not entail an anti-realist *metaphysic* of essence and modality *de re*. Furthermore, Sidelle's claim rests upon confusing our comprehension of the notion of *de re* necessity with our recognition of particular necessities. A demonstration that our knowledge of the concept of necessity is not a method 'for learning about the world' does not show that our practice of applying that concept is no such method. Sidelle's epistemology would certainly count against the anti-conceptualist realist about modality, but it does not, contrary to Sidelle's supposition, undercut realism *tout court*. (This is all the more evident from the implausibility of the thesis that the truth of *a priori* necessities such as (a), (f) and (i) above is secured merely by convention.[69]) This point illustrates a general weakness in Sidelle's account, to which I will return in Chapter 3, namely its identification of realism with anti-conceptualist realism and conceptualism with conventionalism.

---

[68] Exegesis is provided by Kung (1977, esp. 368-372).

[69] To appropriate Forbes (1997, 530), 'it is unsatisfactory to suppose that these truths are manufactured by stipulations....To the extent that one finds the principles plausible, they seem forced on us by the nature of our concepts.' Cf. the metasemantic account of the *a priori* proposed by Peacocke (1993), according to which *a priori* principles constitute possession conditions for our concepts, rather than *mere* 'truths in virtue of linguistic meaning' after the fashion of the Carnapian account of analyticity.

I hope to have alleviated somewhat the epistemological worries associated with modality, especially those associated with modality *de re*. To reiterate: principles of the forms exhibited by examples such as (a) and (f) are true *a priori*. They are *de dicto* necessities concerning *de re* modal notions. The status of (f) as an *a priori* necessary truth tells us nothing about the epistemology of 'it is metaphysically necessary for *A*s to *x*'. Whether or not it is necessary for *A*s to *x* will depend upon the essence of things of kind *A*. When *A*s are concreta, neither our knowledge of necessary truths nor *a priori* reflection will supply us with an answer to the question as to the essence of *A*s: the empirical is essentially implicated in our arrival at the right answer to that question. Our knowledge of what is always the case concerning *A*s supplies us with defeasible grounds for having certain beliefs concerning the nature of *A*s. There may be characteristic marks or behaviours we associate with things of kind *A* and which figure in our individuative practice concerning *A*s. If a thing displays these then we have defeasible grounds for regarding it as an *A*. In the next chapter I will suggest, on the basis of Wiggins (1980), that reality is modal in nature since it is such that it can be subsumed under the substance concepts we employ: it is reciprocally related with our conceptual apparatus. We discover which of our purported substance concepts are satisfied by reality: this entails that we have knowledge of real necessity. Furthermore, I will argue that anti-realist positions concerning necessity, essence and individuation are committed to an untenable and epistemologically bankrupt metaphysic.

2.3 A Defence of Modal Primitivism

Modal Eliminativism

The impossibility of eliminativism can be established by illustrating that modal discourse not only characterizes our thought and practice, but that it is indispensable. Also, quite apart from any particularly sophisticated philosophical objections to modal eliminativism, aspersions can be cast upon the position by pointing to its own *prima facie* internal inconsistency: the eliminative programme is apparently imbued with reliance upon possibility.[70,71] The appeal to possibility

---

[70] Quine, like other empiricists hostile to modality, is more prone to make use of the notion of possibility than that of necessity. Although Quine has it that modal attribution *de re* is unintelligible, his charge against modality *de dicto* must be that there are no necessary truths rather than that the very notions of possibility and necessity are unintelligible: cf. Hale (1997, 487). Quine's claims about revisability seem to be double-edged. He seems committed to the *de dicto* claim that every statement is revisable, as well as the *de re* claim that it is possible for us to have experience, relevant to any given statement, to engender the negation of that statement.

[71] If Quine regards his own philosophy as primitive science, then it is consistent for him to employ talk of natural necessity and possibility therein. Such modality is permitted by

permeates that which motivates the eliminative programme, since its foundational premise relates to the ever-present possibility of recalcitrant experience. It is because all statements are held to be revis*able* in the light of recalcitrant experience that Quine attacks the *a priori*, analyticity and necessity: the Quinean attack is itself rooted in modality. The omnipresent possibility of recalcitrant experience entails that it is impossible that any statement is immune from the effects of such experience. It thus entails that the possibility of recalcitrant experience holds as a matter of necessity. The eliminative programme is itself reliant upon the modalities it seeks to jettison.

The Quinean faces something of a catch-22. On the one hand there is the issue just discussed, relating to the Quinean revisionist's reliance upon the ever-present possibility of recalcitrant experience. On the other, there is an issue about how, if at all, the Quinean programme can retain any prescriptive element if all statements are revisable. Modal eliminativism undercuts itself if the prescription that modal discourse be jettisoned cannot have any clout without appeal to the class of judgments it seeks to banish.

The charge that a Quinean attitude to the logical modalities collapses goes back at least as far as Pap's discussion. According to Pap (1958, 372), the Quinean pragmatist's account of 'logical truths' as those which we are least likely to forsake in the face of recalcitrant experience, but which are answerable to such experience nonetheless, fails to explain why it is that those truths enjoy such privileged status in the first place. Pap comments that the abandonment of logical and mathematical principles would itself be answerable to the demands of logical necessity, since even Quine (1980, 42) has it that revisions must be consistent.

Wright provides a critique which, although independent of Pap's discussion, puts flesh on the bones of the charge that global empiricism is incoherent.[72] Wright (1986, 192-194; cf. 1980, 322-323, 327-330, 415-420) argues that the assessment of an experience as recalcitrant will require the *a priori*, thus rendering Quinean pragmatism incoherent. Wright argues that in order to be adjudged recalcitrant, 'a barrage of experience, *E*' (1986, 192) will be at odds with a theory η and its underlying logic *L*, to the effect that the experience would conflict with a conditional *I* ♦ *P* which is derivable from η via *L*. That is to say, *E* will be such that 'it inclines us to assent both to *I* and to the negation of *P*' (1986, 192). If there can be no resort to the *a priori* then there would appear to be nothing

Quine, e.g, (1966, 48-56; 1969, 130-138) solely because it is required by dispositional attributions, which are a hallmark of primitive science. When science moves from the dispositional to the categorical the need for such attributions is held to wither away. In the case of the revisability of all statements, it is not clear that dispositional attribution is at all pertinent. Quine is at liberty to help himself to a notion of primitive-scientific possibility but it seems that revisability cannot be accounted for in terms of that notion, since Quine's stance is that total science is continually, and will ever be, subject to the tribunal of (possibly recalcitrant) experience. It thus appears that Quine's philosophy is itself inconsistent with canonical science, in which the modalities have no role.

[72] For an intricate discussion of the arguments of Wright and McFetridge, with a view to combining and bolstering them, see Hale (1999).

to prevent us from denying that the experience is recalcitrant: unless the judgment that it is recalcitrant is really correct on *a priori* grounds there is no way in which any experience can be so adjudged. This is because the judgment that *E* is recalcitrant is dependent upon the statement *W*, that *I* ♦ *P* is derivable from η via *L*. *W* itself is established via proof that *I* ♦ *P* follows from η via *L*. (Wright (1986, 193) notes that this proof is independent of any endorsement of the principles of *L*.) Wright comments that 'the very description of *E* as recalcitrant for η-with-*L* presupposes acceptance of a statement which is established by proof, which is analytic if any statements are, and which is independent of *L*' (1986, 193). The problem for Quine is that if, as he maintains, all judgments are revisable, then this will apply to *W*. The global empiricist is in no position to rule out the option of *denying* that *E* is recalcitrant, via a denial of *W*. Whether or not this move could be positively sanctioned will rest upon further pragmatic considerations. The problem is that judgments about recalcitrance will always rest upon statements similar to *W* which are themselves to be adjudged in the light of their own pragmatic acceptability (in which judgments about recalcitrance will themselves figure). The Quinean can only designate an experience as recalcitrant on the basis of a *W*-like statement which is itself revisable and in respect of which we are left with no justificatory guidelines: in fact we are left with no means of assessment for recalcitrance. The revisionism to which the Quinean is committed is seen to result in a regress. If judgments of recalcitrance are to have any support and any bearing they must be treated as non-revisable; otherwise the regress will ensue.

McFetridge (1990, 149) notes that Wright appears to move from his initial conclusion that at least some statements such as *W* should be taken to admit of proof—where proof is construed 'as a theoretically uncontaminated source of rational belief', Wright (1986, 194)—to the suggestion that some statements are logically necessary. In effect, McFetridge accuses Wright of conflating the modal and the epistemic, charging that while Wright is successful in arguing that there is a requirement for exempting some statements from the class of revisable statements it does not follow that necessity pertains to these statements:

> nothing in the anti-Quinean argument showed any need for the statements [e.g. *W*] established by these 'proofs' to be regarded as *necessarily* true: merely true, and conclusively established in a way neither requiring nor vulnerable to holistic appraisal. But this feature seemed not to add up to a notion of necessity. (1990, 149)

Like Kripke (1980, 34-39), McFetridge emphasizes that the epistemological classification of statements is distinct from their classification according to modal status. McFetridge (1990, 149-150) comments that Wright's move from the epistemic to the modal in the concluding steps of his anti-Quinean argument stems from Wright's own tendency to favour a non-cognitivist account of logical necessity (associated with Wittgenstein) according to which the use of the notion

of logical necessity in relation to a statement is an indication of our reluctance to treat that statement as refutable. In McFetridge's view (1990, 150), the trouble with this conception of our operations in respect of logical necessity is that it allows no room for statements which we may regard as *if true then necessarily true* nor does it leave much room, if any, for distinguishing between dogmatic acceptance and classification as logically necessary.[73] McFetridge's discussion suggests that there is a gap in Wright's account. If a non-cognitivist account of necessity is accepted, then Wright's argument succeeds in establishing that there are logically necessary statements. However, since such an account is at least dubious the anti-Quinean argument is successful in establishing only the weaker conclusion that some statements must be exempted from holistic appraisal.

The anti-Quinean argument expounded by McFetridge (1990, 153-154) argues directly for the indispensability of logical necessity, thereby undermining the cogency of the Quinean project, rather than proceeding by means of an initial argument for the incoherence of the Quinean position. McFetridge prepares the ground for his argument by emphasizing the detachment of the notion of validity from that of the truth of the constituents of an argument, stating that the notion of validity we employ is such that a mode of inference is valid (i.e., logically necessarily truth-preserving) or invalid irrespective of the specific content of the premises of any argument in which it is manifested. Thereby, principles of inference can be implemented which have an extent such that they are applicable to any and all of the suppositions we might make. This notion of validity as logically necessary truth-preservation is indispensable to reasoning from suppositions, so logical necessity is needed. This conclusion is established as follows.

To reject logical necessity would be to suppose that for every acceptable mode of inference *M* there is at least one proposition *r* such that *r* would fall outwith the range of appropriate applicability of *M*, thereby precluding *M* and the supposition that *r* from employment in one and the same argument. If it is known under which suppositions *r* it will be that *M* is illegitimate then the position depicted in the previous sentence is self-refuting, since it will then be the case that the mode of inference *M* conjoined with not-*r* will be applicable under all suppositions. McFetridge (1990, 153-154) suggests that there is no supposition such that it falls outwith the range of applicability of the modified mode of inference that '*M* can be applied under the supposition that not-*r*'. If, on the other hand, it is not known which proposition the supposition of which would exclude the applicability of *M* to any argument in which such a supposition were to feature, but there is believed to be some such proposition, then *M* would be inapplicable. In order to employ *M* it is necessary to know whether, for any supposition that *p*

---

[73] On the assumption that the first criticism is predicated upon Kripkean considerations concerning necessary *a posteriori* truths it is one with which I cannot agree, given my criticism of that aspect of Kripkean modal epistemology. However, it may well be that it is the case of examples such as Goldbach's conjecture which motivate the criticism, in which case I have no quibble.

which might feature in an *M*-relevant argument, the truth of that proposition would undermine the truth-preserving capability of *M*. In the situation outlined this would not be known, thereby rendering the mode of inference inapplicable. There would be no means of determining the tenability of *M* with a supposition that *p* since the rules of inference embodied in *M* could not be employed subsequent to the supposition that *p*, since those very rules themselves would be under scrutiny.

So, if *r* is known then the rejection of logical necessity is self-refuting; if *r* is unknown then no reasoning from suppositions can occur, since modes of inference are inapplicable in such a circumstance. The notion of logical necessity is indispensable to reasoning from suppositions. Since the practice of reasoning from suppositions is not up for elimination, we must not jettison logical necessity.

McFetridge's argument illustrates that there must be *at least one* logical necessity if the *general* practice of reasoning from suppositions is to be preserved. My argument in the previous section set out specific modal principle*s* which merit classification as logically necessary since they are constitutive of the very notions we employ. Such principles are essential to our *actual* reasoning practice. They include truths concerning *de re* modal notions. Given the indispensability of logical necessity the *a priori* is shown to be indispensable, since logic is an *a priori* science.

Criticisms of the modalities fail to justify, never mind necessitate, their elimination. Such criticisms may indicate the requirement for a clarification of our modal notions or for an approach to these notions other than that in which the criticisms in question have their source. A case in point concerns Quine's attack upon the analytic/synthetic distinction, as summarized by Grice and Strawson (1956, 147):

> There is a certain circle or family of expressions, of which 'analytic' is one ['necessary' is another], such that if any one member of the circle could be taken to be satisfactorily understood or explained, then other members of the circle could be verbally, and hence satisfactorily, explained in terms of it....Unfortunately each member of the family is in as great need of explanation as any other.

Quine appears to take it for granted that in the 'explanation' of the terms figuring in the intensional circle, no explanation from outwith that circle can be provided.[74] Thus, he maintains that the terms in question are hopelessly unclear and have no place in canonical science. Even if we concede to Quine that his view of the relationship between the (mooted) notions of analyticity and necessity is correct, it is not imperative to interpret the intensional circle in a Quinean manner, as compelling us to accept, or being suggestive of, modal eliminativism. In fact, it may be taken to suggest the appropriateness of modal primitivism. If necessity need not be as strongly associated with analyticity as Quine suggests, i.e., if

---

[74] Cf. Grice and Strawson (1956, 147-148) and Haack (1978, 173-175) on Quine.

Quine's intensional circle does not accurately represent the framework for the supposed explanation of modal notions, it might nonetheless be the case that no extra-modal explanation could be provided for modality (such an explanation would seem to be what would be required, in Quine's eyes, for the provision of any respectability to the notions in question, although he does not see it as having positive prospects). Such a circumstance would again be strongly suggestive of the appropriateness of modal primitivism.

Modal Reductionism

Modal reductionism is the view that the modal reduces to the non-modal. This is a better way of putting the matter than to suggest that modal reductionism is the view that the modal reduces to the actual, since that would be to make the unwarranted assumption that the actual is non-modal. In addition, Lewisian modal reductionists hold that the modal reduces to non-modal, non-actual reality.[75]

Actualism is the thesis that the totality of real existents does not include unactualized possibilia: nothing follows from the adoption of this stance as to which approach to modality should be favoured, other than that objectual modal realism, i.e. the thesis that there are non-actual truth-makers for modal discourse, should not. Being an actualist in this sense is consistent with both (non-objectual) realist and anti-realist accounts of modality. The position that I call 'rigid actualism' supplements actualism with the thesis that the actual is non-modal. The contrast between actualism and possibilism concerns *ontical* matters: it concerns questions as to what entities exist.[76] Rigid actualism contrasts with both non-objectual modal realism and possibilism. The contrasts here are both ontical and *ontological*: they concern not only that which is posited as real, but its nature. The non-objectual realism I adopt herein subscribes to the ontological thesis that necessities and possibilities inhere in actuality. Only this position challenges the specifically ontological tenet of rigid actualism.[77] (It is unfortunate that the view

---

[75] McFetridge (1990, 141) states that the modal realist holds that there are *irreducibly* modal facts, yet he counts the Lewisian approach as a form of realism. McFetridge takes the possible worlds to be 'modal objects' on the basis that 'the modal expressions are interpreted as various kinds of quantifiers over them'. The point of the Lewisian project, however, is precisely to *reduce* the modal to the non-modal.

[76] Cf. McFetridge (1990, 141).

[77] The term 'modal actualism' is used by Shalkowski (1994, 687-688) to designate his own view that there are irreducibly modal facts ontologically grounded in actuality. (Cf. the usage of Loux (1979a, 55).) The phrase 'modal actualism' was coined by Kit Fine in Prior and Fine (1977, 116), to designate the conjunction of the theses that modal idioms are primitive (modalism) and that only actual objects exist (actualism): the adoption of that position does not commit one to the ontological thesis to which Shalkowski subscribes. Shalkowski apparently equates non-objectual realism with primitivism, when in fact, the former is a subspecies of the latter. This mistake is a consequence of Shalkowski's foundational assumption (1994, 669) that one of the prime tasks of the modal metaphysician is to provide an account of the truth conditions for modal facts. It is bad policy simply to

that modal realism involves the acceptance of possibilia has gained so much currency due to the views of David Lewis, who is bold enough to state flatly (1986, vii) that modal realism is 'the thesis that the world we are a part of is but one of a plurality of worlds'.) It is unhelpful, but commonplace, to suppose, as does McGinn, that the polarities in the approach to modality are actualism and realism, since actualism opposes not realism, but possibilism.

The taxonomy favoured here is an improvement upon that employed by McGinn, since the former clearly marks out the distinction between the issue of actualism/possibilism and that of realism/anti-realism about modality. This important distinction between matters ontical and matters ontological has been insufficiently recognized in much recent work on modality.[78] To reiterate: rigid actualism is an ontological thesis with which modal realism is inconsistent. Modal realism is consistent with actualism, the ontical thesis that only actual entities exist.

Once modal eliminativism has been rejected the fundamental choice which confronts the modal metaphysician is between modal primitivism and modal reductionism: this will be dealt with prior to the question as to whether realist primitivism is to be favoured over anti-realist primitivism.

Lewis explicitly criticizes modal primitivism. In his view, our modal idioms are quantifiers over worlds. Worlds other than the actual world, and the objects occupying them, are non-actual but real. Objectual modal realism is ontologically anti-realist about modality. Ontologically (rather than semantically) speaking, it is realist not about the modal, but about the possibilia which are held to supply the non-modal truth conditions for modal discourse. Lewis asks,

> If our modal idioms are not quantifiers over possible worlds, then what else are they? (1) We might take them as unanalyzed primitives; this is not an alternative theory at all, but an abstinence from theorizing. (2) We might take them as metalinguistic predicates analyzable in terms of consistency...If a consistent sentence is one that could be true, or one that is not necessarily false, then the theory is circular...If a consistent sentence is one whose denial is not a theorem of some specified deductive system, then the theory is incorrect rather than circular: no falsehood of arithmetic is possibly true, but for any deductive system...either there are falsehoods among its theorems or there is some falsehood of arithmetic whose denial is not among its theorems. If a consistent sentence is one that comes out true under some assignment of extensions to the non-logical vocabulary, then the theory is incorrect: some assignments of extensions are impossible, for instance one that assigns overlapping extensions to the English terms 'pig' and 'sheep'. If

assume that the modal metaphysician must adopt a truth-conditional approach. Shalkowski is apparently guilty of a mistake he attributes to others (1996, 386), namely of foreclosing the theoretical options before their discussion even begins.

[78] Lewis and McGinn are among the guilty parties. Plantinga (1987, 189, 196-197) is cognizant of the distinction.

a consistent sentence is one that comes out true under some possible assignment of extensions, then the theory is again circular. (3) We might take them as quantifiers over so-called 'possible worlds' that are really some sort of respectable linguistic entities; say, maximal consistent sets of sentences of some language....But again the theory would be either circular or incorrect, according as we explain consistency in modal terms or in deductive (or purely model-theoretic) terms. (1973, 85)

The first approach, modal primitivism, is rejected by Lewis: he simply stipulates that modal metaphysical theorizing must provide an extra-modal account of modality if it is to count as theorizing. I have already criticized this prejudice (at 2.1). The second and third are rejected because each is either false or fails to be genuinely reductive, constituting primitivism by the back door.[79],[80]

In the above quotation, Lewis characterizes modal primitivism as primitivism about our modal *idioms*. Elsewhere, he suggests that modal primitivism is the view that the modal *operators* are unanalyzable (1986, 13-14, 17). He then appears to suggest that since these operators are not exhaustive of our modal idioms, the primitivist has more to deal with than the primitivist anticipates. Lewis seems to be trying to present this as a difficulty for modal primitivism. Since the modal operators are not exhaustive of our modal idioms, and the primitivist is by no means compelled to hold the contrary view, there is no reason to succumb to Lewis's rhetoric here, and we can maintain that his earlier characterization of primitivism is more accurate. Modal primitivism just is the rejection of reductionism and eliminativism about modal discourse: the view is not confined to the modal operators. Lewis's rejection of modal primitivism is both arbitrary and predicated upon misrepresentations of modal primitivism. The earlier characterization of modal primitivism as abstinence from theorizing is misrepresentative and rests upon the implausible assumption that only reductive analysis constitutes genuine theory or explanation. His later account misrepresents primitivism by assuming that the primitivist 'has more on his hands than he thinks he has' (1986, 14), i.e. by assuming that the primitivist is not cognizant of the fact that there are modal idioms other than the modal operators.[81]

Lewis's own project is to provide a reductive analysis of our modal idioms, not just the modal operators, in terms of quantifiers over possible worlds

---

[79] Lewis (1986, Chapter 3) objects to 'linguistic', 'pictorial' and 'magical' forms of 'ersatzism' about worlds on the grounds that they require primitive modality. (3) is the ersatzist approach.

[80] In relation to the second and third we might add that neither could hold since neither is exhaustive of our modal idioms: neither approach can account for irreducibly *de re* modal idioms.

[81] In relation to operator primitivism, Lewis's views are in sharp contrast with those of Peacocke (1978, 475), according to whom 'one major *attraction* of an operator treatment [of necessity] is that it does not treat "$\Box$" as any kind of quantifier' [my emphasis].

and their inhabitants.[82] He is a semantic realist about modality, but his position is ontologically anti-realist in that he holds that the modal is nothing over and above the non-modal. So, Lewis's modal realism is not, in point of ontology, modal realism proper at all, contrary to his own regular insistence that his is the only 'genuine' modal realism. Lewis is a realist about possibilia, not about modality: possibilia serve as the reductive bases whereby the modal is held to reduce to the non-modal. His hostility to primitivism stems from the view that accounting for the modal in modal terms is explanatorily void and an abstinence from theorizing. According to Lewis, 'the ersatzers must resort to primitive facts where genuine modal realists can offer analyses' (1986, 140-141). Lewis rejects attempts, other than his own, to reduce the modal to the non-modal on the ground that they make appeal to notions which they seek to explain, thereby resulting in primitivism. Since we recognize that reductive analyses are not exhaustive of genuine modal theories we reject Lewis's principle that for any account of modality to qualify as a genuine theory it must not make appeal to modal notions. However, if Lewis's principle is watered-down to form an alternative principle such that for an account of modality to qualify as a genuine reduction it must be extra-modal, we are in a position to endorse this latter principle.

Contrary to his own claim, Lewis fails to show that the ersatzist must resort to primitive *facts*: to show that ersatzism does in fact resort to primitive modality need not be to show that it is primitive modal *facts* to which appeal is being made. Ersatzism might rest upon primitivism about our modal notions without necessarily postulating modal facts. Lewis's criticism of linguistic ersatzism will serve to illustrate the ways in which ersatzist programmes make appeal to primitive modality. Lewis (1986, 150-151) describes two routes to primitivism inherent in linguistic ersatzism. The first route to primitivism arises via the requirement for consistency. Lewis (1986, 150) writes that if modality is to be reduced to quantification across ersatz worlds characterized as sets of sentences then any such set must be consistent: 'An inconsistent set might be an ersatz impossible world, but it is not an ersatz possible world.' Employment of the notion of consistency will make appeal to primitive modality, since, 'a set of sentences is consistent [if and only if] those sentences, as interpreted, *could* all be true together'. The second route to primitivism arises 'via implicit representation' and it is outlined thus:

> It may be that so-and-so, according to a certain ersatz world, not because there is a sentence included in that world which just means that so-and-so, no more and no less; but because there are sentences which jointly imply that so-and-so. There might be a single sentence which implies that so-and-so but doesn't just mean that so-and-so because it

---

[82] *Contra* Blackburn (1984, 213), who attributes the view that modal idioms are irreducible to Lewis. Commentators who subscribe to the view that Lewis is a modal reductionist include Weiss (1980), Plantinga (1987), Rosen (1990), Shalkowski (1994) and Divers (1997).

> implies more besides; or there might be a finite or infinite set of
> sentences which jointly imply that so-and-so. This implication is *prima
> facie* modal: a set of sentences implies that so and so [if and only if]
> those sentences, as interpreted, *could* not all be true together unless it
> were also true that so-and-so; in other words, if it is *necessary* that if
> those sentences are all true together, then so-and-so. (1986, 151)[83]

This will be imminent if and only if the worldmaking language lacks the expressive power to represent explicitly what it represents implicitly. Lewis makes the formal point that a language may be impoverished syntactically or semantically such that the language itself lacks the means to render explicit something which it implies. An ersatz world may be constituted by sentences of a worldmaking language in which entailments arising from the relevant set of sentences cannot be explicitly represented due to an expressive inadequacy in the language. Lewis maintains that ersatz worlds are maximally consistent relative to the worldmaking language, not absolutely. There will be a trade-off between the demands of consistency, which are more easily met by an impoverished language, and the desirability of expressive power, which characterizes a rich language (1986, 152). It might be objected that the second route to primitivism will not arise for the ersatzist whose worlds are sets of maximally consistent propositions, rather than sentences of any worldmaking language. For Lewis, however, this would be no objection, since he regards propositions as sets of Lewisian worlds (1986, 53-55).[84]

  If it can be shown that the Lewisian approach fails to capture the modal facts, or that the purportedly reductive terminology is itself overtly modal, or that it requires primitive modality either in explicating the meanings of the terms it employs or in explicating the metaphysical theses to which it is committed, then its plausibility will be undermined.[85] We might intuit that our modal notions, and accordingly our modal idioms, are in some sense prior to possible worlds, or at least that a possible worlds account is not genuinely reductive of modality.[86] In the recent literature attempts have been made to substantiate this intuition. Lycan (1988, 46) charges that the facts of modality cannot be accounted for without the ruling out of impossibilia, and that the Lewisian has no resources to do this without making appeal to primitive modality: 'world' is a modal primitive, since

---

[83] Lewis (1986, 154-156) identifies two places where primitive modality 'will not go away' in linguistic ersatzist accounts: in the axiom corresponding to the maintenance of the consistency requirement, and, in the *connecting axioms* which relate local and global descriptions within a world.

[84] Lewis's view is criticized by Plantinga (1987).

[85] This dialectic is laid out by Divers (1997, esp. 147, 153). Even if the outcome is less than conclusive, the account of modality I defend herein may have the advantage in that it is not ontically profligate and is comparatively respectable from an epistemological perspective.

[86] The latter stance is adopted by Kripke (1980, 19 nt. 18); cf. Putnam (1983, 67-68).

for Lewis it has to mean '*possible* world'.[87] The charge, then, is that in any purportedly extra-modal worldly analysis of a given (*de dicto*) possibility claim, 'possible' will be implicated, in a relatively unsubtle manner, in the supposed base discourse. Some critics have claimed that Lewis's argument for possibilia applies, *mutatis mutandis*, to impossibilia, which might be taken to suggest that the Lewisian's explicit ontical commitments are, ironically, arbitrarily parsimonious.[88] The Lewisian reply is that only possibilia are needed to account for the modal facts.[89] This, in itself, constitutes a reply only to those who accuse Lewis of ungrounded parsimony: Lycan's charge that 'world' is itself a modal primitive is unaffected.

In the absence of any such provision in Lycan's discussion, Divers (1997, 147) proposes the following as a necessary condition on non-circularity:

> (NC1) A proposed reduction is non-circular only if the [purportedly reductive] right-sides of equivalences involve the use of neither: (i) vocabulary from the proscribed class; nor (ii) vocabulary the sense of which could be conveyed adequately only by using vocabulary from the proscribed class.

Where modal reductionism is at issue overtly modal vocabulary is of the proscribed class. Lycan's charge might appear to be that 'world' falls foul of (ii). However, Lycan's charge is (invalidly) deduced from the claim that, 'the very flesh-and-bloodiness [of Lewisian worlds] prevents [Lewis] from admitting impossibilia' (1988, 46). Divers (1997, 146ff) points to a conflation—inherent in Lycan's charge—between matters intensional and matters extensional. (NC1) lays down a condition on the vocabulary, and the sense of the vocabulary, which is to feature in the purportedly extra-modal base discourse. Since there is no such conception as circularity in extension (1997, 146), the Lewisian commitment that impossibilia do not feature in the *extension* of 'world' is not sufficient to convict the Lewisian of circularity by the lights of (NC1). Lycan's charge, then, does not straightforwardly convict Lewis of importing primitive modality into his analysis along the lines of (ii). Divers (1997, 149ff) emphasizes that the sense of a term, the justification for beliefs concerning its extension, and the articulation of

---

[87] The same charge is made by Lycan and Shapiro (1986, 358). Putnam (1983, 67) claims that it is 'evident that one cannot explain the notion of *possibility* itself in terms of possible worlds'. Cf. the claim of Mondadori and Morton (1976, 19) that a reduction of the modal 'is unobtainable on anyone's account'.

[88] The argument at issue occurs at Lewis (1973, 84): it relates to the claim that there are 'ways things might have been', with which Lewis agrees and which he says he takes literally by committing himself to realism about possible worlds. The impossibilist version: there are ways things could not have been, so there are impossible worlds. This is due to Naylor (1986); cf. Yagisawa (1988, esp. 183). On the charge of arbitrary ontical economy see the ensuing discussion of Shalkowski's critique of Lewis.

[89] Miller (1989, 476), after Sharlow (1988); cf. Lewis (1986, 7 n. 3).

commitments concerning its extension are distinct: respectively, they concern intensional, epistemological, and metaphysical matters. In so far as Lycan's objection is predicated upon the Lewisian's concretist commitments, it fails, by the light of (NC1), to convict the Lewisian of circularity, since the commitments at issue, and the justifications thereof, concern matters extensional, rather than the intension of 'world'. Accordingly, the Lewisian reduction of modal discourse to quantification over worlds is not shown to fail to be *analytic* of that discourse.

In response to Lycan's charge, Miller (1989, 477) suggests a non-modal definition of 'world' such that:

> (1) Individuals are worldmates if they are spatiotemporally related. (2)
> A world is a mereological sum of worldmates.

Thus, it is suggested, base discourse involving quantification over worlds is intelligible independently of acquaintance with modal concepts: reductionism has not been shown to fail.[90] This treats Lycan's charge *per se*, illustrating that it is not just Lycan's argument for it that is insufficient to establish circularity.

Divers (1997, 150-153) outlines two further escape routes from Lycan's charge that, given the Lewisian commitment to the concreteness of worlds, 'world' must mean 'possible world' since their concreteness precludes worlds from having 'logically incompatible constituents' and if 'the Concretist needs or wants to rule out impossibilia by fiat, the Concretist is stuck with a modal primitive' (1991a, 224). It might be held that there is an absolute, but non-analytic, necessity such that whatever is concrete is possible. Such a tenet is insufficient to establish that 'world' means 'possible world', so again, the reductionist is innocent of circularity by the light of (NC1).[91] Alternatively, the reductionist may *admit* that 'world' means 'possible world'. This is again insufficient to demonstrate (NC1) circularity, since, where the reductive vocabulary is uncontaminated by proscribed vocabulary, the reductionist account is circular only if conceptual priority genuinely attaches to the overtly modal discourse. Such priority cannot be laid down as a prior condition upon debate. Reductionists have it that the *analysandum* contains no cognitive content over and above that contained in the *analysans*: we can hardly fittingly proscribe the reductionist's position merely in virtue of its

---

[90] Cf. van Inwagen (1986, 187) and Divers (1997, 149), both with more detail. (Unlike Divers, van Inwagen (1986, 194-199) accepts that Lewis provides a genuine reduction of the modal to the non-modal but argues that the analysis which Lewis provides, although genuinely reductive, is incorrect. Unlike Divers, van Inwagen takes it that the provision of equivalence relations between modal and worldly terminologies and a non-modal explication of the sense of 'world' is sufficient for a genuine reduction of the modal to the non-modal.)

[91] Though, as Divers indicates (1997, 151), this line of defence comes at a heavy price in that the semantical and logical benefits purported to accrue from the analyticity of equivalences between modal and worldly discourses would then be lost. This is very serious indeed given Lewis's claim (1986, 133-135) that these benefits motivate, and are supposed to compensate for, the *prima facie* implausibility of his metaphysics.

reductionist aspiration. In order to avoid begging the question, the anti-reductionist has to show that the reductionist has no legitimate claim to conceptual priority for the purported base discourse.

Following his defence of the reductionist against Lycan, Divers adds that the reductionist is still vulnerable to attack, since (NC1) is not a sufficient condition for non-circularity. Accordingly, Divers proposes an expanded conception of circularity:

> (NC2) A reductionist proposal is non-circular only if the reductionist can adequately express, without using proscribed vocabulary, whatever other claims he is committed to expressing in defence of his proposal. (1997, 153)

This expanded conception covers not only the senses of the purportedly reductive terms, but also the expression of beliefs concerning their extensions.[92]

This conception might be applied as follows. Despite Lewis's own commitment to the concreteness of worlds—his disavowal of any perspicuous concrete/abstract distinction notwithstanding—a philosopher who accepts the non-arbitrary equivalence of modally qualified *dicta* and quantification over worlds need not have it that 'world' *means* 'concrete world'. The tenet that the terms are co-extensive is consistent with the tenet that they do not have the same sense. Lewis's commitment concerns the extension of 'worlds'. It remains to be seen whether that commitment can be expressed in a manner not proscribed by (NC2). Lewis (1986, 165) states that the linguistic ersatzist has to appeal to primitive modality, since only consistent sets of sentences will count as worlds. Lewis claims that his account faces no such problem since 'there is no such thing as an inconsistent world'. Lewis is apparently claiming that *concreta* (unlike linguistic items) are not the kinds of items which can exhibit inconsistency. It is difficult to see how this claim can be interpreted except as a *de re* modal claim about worlds: Lewisian worlds are such that it is metaphysically impossible for them to admit of inconsistency. So, Lewis's commitment to the non-abstract, non-linguistic, natures of worlds appears to convict him of circularity by the light of (NC2).

Miller's (1) (1989, 477, quoted above) has it that spatiotemporal relatedness is a (merely) sufficient condition for worldmatehood. This contrasts with the specification of worldmatehood provided by Lewis (1986, 71), according to whom spatiotemporal relatedness is a *necessary* and sufficient condition for worldmatehood: 'things are worldmates [if and only if] they are spatiotemporally related'.[93] Lewis has it that a world is 'a maximal mereological sum of

---

[92] There is a caveat: 'the case has yet to be made that...(NC2) is both justified and effective [in convicting the reductionist of circularity]' (1997, 154). In the light of the hiatus relating to justification, attempts to apply (NC2) to would-be reductionist views should be viewed as provisional.

[93] Worlds in which only temporal relatedness pertains are here understood to be included as maximal sums of spatiotemporally related worldmates (1986, 73).

spatiotemporally interrelated things [i.e. worldmates]' (1986, 73). Lewis's comments, unlike those of Miller, are not explicitly set out as providing the *meaning* of 'world'. Were they so intended, it would appear that neither the notion of worldmatehood nor that of a world could be modally innocent. On the other hand, insofar as Lewis's comments concern the characterization of *worlds*, they might fall foul of (NC2). Lewis (1986, 72) views the worldmate relation as non-primitive, but it appears that his commitments regarding its nature cannot be explicated non-modally. In addition, the modality involved cannot reduce to quantification over worlds, since such an attempted reduction would generate a vicious regress.

Divers (1997) seeks to combine (NC2) with considerations highlighted by Shalkowski's discussion of Lewisian reductionism, in order to bolster the anti-reductionist case presented therein. Shalkowski (1994) employs the relatively imprecise principle that if one is going to advance modal reductionism then one precludes oneself from imposing a modal constraint on theorizing: modal reductionism fails because it cannot both honour this principle and remain non-arbitrary. Shalkowski argues that: (i) all objects in the (supposedly) reductive base must 'meet the *prior modal condition* that they are possible' (1994, 677); and, (ii) in order to provide grounds for modality, the set of non-actual objects appealed to must be *exhaustive*, i.e., inclusive of *all* possibilia. It will be exhaustive not if it is merely the case that it has no more members, but only if it *cannot* have any more members: another prior modal condition is required (1994, 679-680). If the Lewisian meets conditions (i) and (ii), his account will be circular; if he attempts to jettison the two prior modal constraints, then the modal theory which results will be arbitrary (1994, 680).

Shalkowski contends that the condition requiring that impossibilia are debarred from featuring in the reductive base shows that 'modal facts' are metaphysically prior to 'nonmodal facts involving the existence of worlds' (1994, 678). Divers (1997, 156) raises the suspicion that this is question-begging against the reductionist, since it seems to suggest, contrary to the reductionist's contention, that two distinct sets of facts are at issue.[94] Shalkowski, like Lycan, has failed adequately to justify the allocation of priority to the modal over the non-modal. Nevertheless, Divers contends that Shalkowski's claim that Lewisian reductionism is either arbitrary or circular might stand:

> it is fair to raise the question of what it is that the reductionist has to do
> to convince us that, even if there does exist a suitably rich totality of
> worlds and other objects, the set of facts so constituted does suffice as
> truthmakers for left-side as well as right-side sentences. The anti-

---

[94] In addition, I would suggest that even if modal restrictions are prior to the postulation of worlds, this does not, contrary to Shalkowski's suggestion, show that modal facts are prior to non-modal facts, but at best that modal notions enjoy a priority over non-modal notions. Even if primitivism could be established on such a basis, ontological primitivism does not follow.

> reductionist might reason, following reflection on arbitrary cases of
> material equivalence, that to get beyond material equivalence to identity
> of truthmakers, we need the supplementary hypothesis that the
> equivalences are also...necessary. Divers (1997, 156)

The relevant notion of necessity is described by Divers as 'metaphysical', but given that he means an unrestricted sense of necessity perhaps subject to 'the S5 principle that whatever is possible is necessarily possible' we would do better merely to describe it as 'unrestricted'. In accordance with the S5 principle, and expanding upon Shalkowski's point (ii), Divers indicates that even if reductionism satisfies the demands of material equivalence, it remains to be demonstrated that it meets the necessary condition upon non-arbitrariness that the equivalences hold of necessity. The reductionist still has to demonstrate 'that all and only the possible objects exist *and* necessarily this is so' (1997, 157). So, the reductionist must assert: (i) 'that the objects that exist are all and only the objects that there could be' (1997, 157); (ii) that the equivalences to which he subscribes hold of (unrestricted) necessity; and (iii) the (unrestricted) necessity of (i).[95] If the reductionist cannot adequately express these commitments in purely non-modal terms then he will be guilty of circularity in light of (NC2). In respect of (i), the specific problem relates to expressing the absolute unrestrictedness of the unrestricted existential quantifier of the first-order (worldly) language in that language itself. The reductionist must express the claim 'that there could not be more than there unrestrictedly is' (1997, 158) in worldly terms. In respect of (ii) the reductionist might claim that the equivalences to which he subscribes hold at every world. A way of doing this has to be found which avoids the consequence that many worlds exist *in* each world (1997, 158).[96] If this can be done then (iii) will be satisfiable by the same means, in respect of the necessity held to attach to (i), whilst the problem pertaining to the assertion of (i) itself remains unresolved. The Lewisian approach, then, is shown to be open to anti-reductionist attack quite independently of the implausibility of its metaphysics.[97]

---

[95] (ii) and (iii) are rephrased versions of the formulations given by Divers (1997, 157).

[96] Cf. Plantinga (1987, 200) on satisfaction *in* a world and satisfaction *at* a world and Noonan (1994, 136) '"at *w*" is ambiguous between "accessible from *w*"...and "in *w*"'.

[97] We might add that Lewisian metaphysics is open to more than a mere 'incredulous stare' by way of objection. Divers (1990, Chapter 4) argues that worlds are not genuine individuals, and that we should be (ontological) anti-realists about worlds, because they fail to meet one of the necessary conditions upon individuality originally set out by McGinn (1981, 152), namely possession of extra-linguistic status. Divers's version of the condition (1990, 71) is that 'Entities of a purported kind are genuine individuals only if they admit of proper identification short of exhaustive characterization'. Possible worlds admit neither of causally dependent indexical identification nor descriptive identification (1990, 72-73). Since purported individuals are genuine only if they admit of identification, there are no possible worlds (1990, 76-78).

It would seem that the Lewisian is faced with an unfortunate dilemma. If the Lewsian seeks to meet (NC2) by exempting 'whatever other claims he is committed to expressing in defence of his proposal' (1997, 153) from modal qualification then he will face the unhappy prospect of having to reject two principles enunciated by Divers (1999, 217), namely,

the principle of modal ubiquity:

(MU) For every true statement p, it is true that it is necessary
that p or it is true that it is contingent that p.

and the principle of (the validity of) possibility introduction:

(PI) p ⓖ It is possible that p.

On the other hand, if the Lewisian does not seek to exempt his claims from modal qualification then it would appear that the Lewisian is committed to primitive modality.

However, Divers (1999) advances an ingenious piece of advocacy on behalf of the Lewisian which will both establish **(MU)** and **(PI)** by the Lewisian's own lights and permit the modal qualification of the claims at issue without thereby committing the Lewisian to primitive modality. The strategy involves a redundancy interpretation of modal operators where those operators contain unrestricted quantifiers within their scope.[98]

The focus of this strategy centres around the Lewisian's view of the semantic functions of sentential modal operators. If a sentence which does not constitute a case of transworld quantification is modified by such an operator, this has the semantic effect of making the quantifiers transworld (i.e., unrestricted) quantifiers (1999, 228-229). (This is perfectly in accordance with the Lewisian's reductionist project: ordinary modal claims are held to reduce to non-modal claims involving transworld quantification.) Divers (1999, 229) explains this using one of Lewis's favourite examples. Ordinarily, when a claim of the form 'There is some x such that A(x)' is made it is understood to constitute a case in which the existential quantifier is restricted to the actual world: 'we intend, or are charitably to be taken, to assert a content in which the domain of quantification is all actual things' (1999, 229). Thus, the truth-condition for the claim that there are talking donkeys is that the actual world has a talking donkey as a part (1999, 229):

$⑦x(Px\alpha \ \& \ Dx)$.

---

[98] Although this is explained primarily using the case of the possiblity operator, it applies, *mutatis mutandis*, to other modal operators. Also, a flight from the charge of primitivism is by no means the only benefit which the Lewisian might be afforded by this strategy. For details on both points, see Divers (1999, 230-233).

The existential quantifier is here restricted by the occurrence of 'α'. This contrasts with the modalised claim, that it is possible that there are talking donkeys. The truth-condition for this claim is that some world has a talking donkey as a part (*loc. cit.*):

$$◇y(Wy \ \& \ ◇x(Pxy \ \& \ Dy)).$$

The modal qualification of the claim that there are talking donkeys, then, results in the replacement of a restricted quantifier with an unrestricted one. We can now take a case which might be held to be problematic for the Lewisian in respect of **(MU)** and **(PI)**, namely the claim that there are many worlds. Since no world has any other world as a part, the semantics for the modal operator in the claim that it is possible that there are many worlds must differ from those for the modal operators in ordinary modal claims such as the claim that it is possible that there are talking donkeys. The claim that it is possible that there are many worlds is, unlike the claim that there are talking donkeys, an *advanced* modal claim: i.e., it is an example of the kind of modalizing that 'primarily concerns…transworld entities and transworld states of affairs' (1999, 220). Unlike the ordinary claim that there are talking donkeys, the claim that there are many worlds is a transworld claim. Accordingly, the introduction of the possibility operator cannot constitute a case in which a world-restricted quantifier is replaced by an unrestricted quantifier. Rather, 'the possibility operator is semantically redundant in such a context, a semantically vacuous expression on a par with "It is the case that"' (1999, 229). Accordingly, the truth-condition for the claim that it is possible that there are many worlds is identical to the truth-condition for the claim that there are many worlds (*loc. cit.*):

$$◇x◇y(Wx \ \& \ Wy \ \& \ x ≠ y)$$

Using the metaphor of logical space, the point can be put in a less formal manner. The claim that it is possible that there are many worlds and the claim that there are many worlds have one and the same truth condition, namely that logical space contains more than one world.

Armed with this redundancy account of advanced modal claims, the Lewisian is now able to side-step the difficulties mooted in Divers (1997) and described above. Divers (1999, 237) explains how the redundancy approach enables the Lewisian to explain the three problematic claims without appeal to modal vocabulary. The claim that there could be no more objects than there (unrestrictedly) are, is explained as follows.

> β is the maximal sum of individuals and it is not possible that there should exist any maximal sum of individuals that is non-identical to β.

When formalised in accordance with the redundancy interpretation of advanced modalising, this is represented as:

$$\text{①}x(\text{P}x\beta) \ \& \ \text{②②}y\text{①}z(\text{P}zy \ \& \ y \ \text{ʎ} \ \beta)$$

'which holds true in virtue of uniqueness for a sum of individuals which is genuinely maximal'.

The necessitated version of the claim just discussed can also be accounted for by the redundancy account. Unlike in the case in which a quantifier is restricted by 'α', no semantic content is added to a claim involving unrestricted quantification by the addition of the operator 'it is necessary that'. The quantifiers which feature in the representation of the advanced possibility claim are unrestricted. So, by the lights of the redundancy interpretation of advanced modal claims, the necessitated claim has the same truth-condition as the first claim. Thus, it poses no challenge that has not already been met

The remaining problematic claim relates to the Lewisian's ability to claim necessity for the equivalences he posits. Divers (1999, 237) claims that when such equivalences are 'represented in a properly metalinguistic form', such as

$$(\text{True}, \ `\text{☎①}x\text{F}x\text{'}) \ \text{❖} \ \text{①}x\text{①}y(\text{W}x \ \& \ \text{I}yx \ \& \ \text{F}y)$$

the equivalences will be transworld claims: thus, qualifying them with the necessity operator will not affect their semantic content.

It seems, then, that the Lewisian might escape from being ensnared by the charge that he is ill-placed to provide a non-circular explanation of the alethic modalities. Nevertheless, various other objections to the Lewisian account may arise. For instance, that it undercuts the purity of the logical modalities. For Lewis, worlds and their occupants are concreta, and facts about concreta will have a determining effect upon what is unrestrictedly possible or impossible. Lewis has it that if (unrestrictedly) all swans are birds then it is not logically possible that there are swans which are not birds (1986, 7). On the account of logical possibility to which I will subscribe in Chapter 4, allowing matters extensional to affect logical possibility in such a manner is undesirable because it conflicts with the point of having the notion and subverts its epistemology.

In addition, further possible sources of primitive modality might be identified. Lewis (1986, 7) depicts nomological modalities as restricted by accessibility relations between worlds. Nomological modalities, unlike logical modalities, require restrictions on the accessibility relation between the actual world and other (unrestrictedly) possible worlds. It has to be shown that an extra-modal analysis of the accessibility relation is available.[99] Since Lewis (1986, 7) admits that it is a contingent matter as to which worlds are nomologically

---

[99] Mondadori and Morton (1976, 19) claim that 'accessible from' cannot be explicated non-modally.

accessible from the world we inhabit, it appears that accessibility relations do not themselves admit of analysis in terms of quantification over worlds. If this is correct then they function as modal primitives.

Also, it is unclear that the Lewisian position can accommodate modality *de re* and do so in a manner which does not make appeal to primitive modality. Modality *de re* is depicted as quantification over possible individuals. Individuals in other possible worlds are held by Lewis (1986, 194) to participate in a relation of 'representation *de re*' with individuals in the actual world. The former are counterparts of the latter and vice versa. However, it is unclear as to what is to count as a counterpart of any actual individual:

> sometimes one is expected to take a position...about what is or isn't possible *de re* for an individual. I would suggest instead that the restricting of modalities by accessibility or counterpart relations...is a very fluid sort of affair...Not anything goes, but a great deal does. (1986, 8; cf. [1968]1983, 42-43)

This seems to undercut the point of the notion of necessity *de re*, since it is unclear that such fluidity could deliver anything that would merit the title of necessity. Counterpart Humphreys are supposed (1986, 194) to be 'very like' the actual Humphrey. But how is that supposed to fit with the claim that counterpart relations are very fluid? If they are fluid then it appears that attributions *de re* do not have determinate truth-values. This does not sit comfortably with an account which purports to provide a semantically realist account of modal idioms but which adds no caveat to the effect that some modal idioms are not included: on the contrary, in commenting that the primitivist has more to deal with than diamonds and boxes, Lewis (1986, 13-14) implies that his account can accommodate all modal idioms. It seems, however, that Lewis can claim semantically realist credentials only for his treatment of modality *de dicto*.[100] As depicted by Forbes (1986, 3), Lewis is a *contextualist* about essence: he holds that 'for each *P* and *x*...there is never an unqualifiedly correct yes/no answer to the question [is *P* essential to *x*?]'. The *absolute* essentialist denies this, but may hold that for *some P* and *x* there is no unqualified answer to the question.[101] Forbes (1986, 24) observes that Lewisian contextualism is motivated by 'skepticism about the existence of modal facts that determine the *de re* possibilities'. Thus, contextualism about essence appears to constitute a variety of anti-realism about essence.[102] (It will therefore be vulnerable to criticisms, which I will outline at 3.3, common to anti-essentialist views.)

---

[100] Lewis [1968](1983, 42) is aware of this point: 'The true-hearted essentialist might well think me a false friend'.

[101] I hold, like Wiggins (1980), that vagueness arises where non-paradigmatic substances, such as artifacts, are concerned.

[102] Cf. Forbes (1986, 25).

Forbes (1985, 64) indicates that the counterpart theorist's notion of similarity appears to differ from our intuitive notion. Intuitively, we might reasonably hold 'that Jones's life could have been very different from the life he has actually led...while at the same time others lead lives quite similar to Jones's actual life'. In such a situation, the counterpart theorist would have it that only the latter individuals count as counterparts, so the intuitive judgment about Jones would have to be deemed false. While there is no obligation on the reductive theorist to maintain our pre-reductive intuitions,[103] this introduces an implausible measure of revision. Forbes remarks that the counterpart theorist might reply that he is using a technical notion of similarity, which he would then have to explain. Forbes (1985, 65) poses the following dilemma: if the counterpart theorist can provide no such explanation then the motivation for counterpart theory, that it avoids the purportedly problematic transworld identity relation, is undercut; if such an explanation is provided, then, unless it precludes counterparthood from being 'a one-one equivalence relation, the same elucidation could presumably be applied to transworld identity, which eliminates the motive for developing counterpart theory'.[104]

Lewis (1986, 12-13) recognizes that the standard modal operators are not exhaustive of our modal idioms and that the form of essentialist claims may not be best represented by the employment of those operators. It follows from Lewis's claim (1986, 13) that there are 'modal idioms that outrun the resources of standard modal logic' that even a successful reduction of the standard modal operators would not be sufficient to expurgate primitive modality. Lewis's comment (1986, 13) that 'modality is not all boxes and diamonds' illustrates that a reduction of the standard modal operators is not enough to establish modal reductionism. In particular, there is a case to answer where modality *de re* is concerned even if

---

[103] Cf. Divers (1997, 144-145). A possible exception to this proposal is indicated by Casullo's suggestion (1992, 133-139), that logicist reductions of number concepts are bound to retain our pre-reductive intuitions concerning the truth-values of judgments involving those concepts. Quine [1936](1966, 72-73) suggests that the logicist is bound to uphold 'traditional usage', including judgments about truth-values, and that this is just a particular instance of a general adequacy condition upon 'definitions'.

[104] Forbes (1985, Chapter 7) seeks to resolve this dilemma where artifact identity is concerned, by introducing 'fuzzy essences' and a many-valued semantics with degrees of possibility. Brody (1980, 106) suggests that, since the resemblance between an object and its counterpart is such that resemblance 'in certain respects is obviously going to have to count more than resemblance in other respects' it appears that 'the properties to be weighed most are the very properties that are intuitively essential'. He then appears to suggest that counterpart theory may fail to meet a non-circularity condition: 'Something analogous to a theory of essentialism is probably needed in order to develop an adequate theory of resemblance, and any approach that wants to use the latter to develop the former is in very serious trouble.' (Cf. Forbes's comments (1986, 22-26, esp. 23-24) on the dubious coherence of contextualism.) Criticism of Lewis's notion [1968](1983, 28) of counterparthood in terms of resemblance 'in important respects' is offered by Kripke (1980, 76-77), while Blackburn (1984, 215-216) raises concern about the counterpart theorist's notion of similarity and its application.

modality *de dicto* admits of successful Lewisian reduction. In order to establish the genuinely reductionist credentials of his account of modality it has to be shown that quantification over possible individuals really is reductive of modality *de re*. To that end, the nature of the modality involved in accessibility and counterpart relations has to be determined. As has been indicated, this does not seem to be explicable, on Lewis's account, in terms of quantification over worlds.

> In the broadest sense, all possible individuals without exception are possibilities for me. But some of them are *accessible* possibilities for me, in various ways, others are not....My qualitative counterparts are *metaphysically accessible* possibilities for me; or better, each of many legitimate counterpart relations may be called a relation of metaphysical accessibility. (1986, 234)

Accessibility for me, is held, by Lewis to relate to the *de re* modalities pertinent to me. The Lewisian must either: revise his account so that accessibility is shown to be explicable in terms of quantification over worlds, proceeding to show that such quantification is genuinely reductive of *de dicto* modality; or, he must illustrate by some other means that the accessibility relation itself is not a modal primitive. Lewis might reply that accessibility is accounted for non-modally, since talk of accessibility just is talk of similarity, which seems to be a modally innocent notion. Nevertheless, it is difficult to see how any truth conditions can be provided for a *de re* modal attribution involving a given individual in the absence of any prior modal restriction upon what is to count as sufficiently similar to that individual.[105] It might further be objected that merely qualitative similarity cannot play a crucial role in the determination of what is metaphysically possible for a given individual,[106] since that possibility will be determined by the essence of the individual, which is not a purely qualitative matter, since qualities inhere in individual substances rather than bundles of qualities being identical with substances. In addition, the problem remains that the commitment to fluidity where modality *de re* is concerned is inappropriate, if not incoherent, in the case of paradigmatic essences (i.e., those pertinent to the objects subsumed under natural kind concepts).

Since identity relations for concreta are metaphysically necessary *de re* (not logically necessary), it is unclear as to how the Lewisian account can grant them accommodation.[107] Lewis (1986, 192) takes identity to be 'simple' and

---

[105] Cf. Brody (1980, 106) and Forbes (1986, 23-24).

[106] Cf. Kripke (1980, 45 nt. 13) who comments that both counterparthood and transworld identity, which it is meant to replace, 'must be established in terms of qualitative resemblance'.

[107] The criticism I am about to offer contrasts with that of Forbes (1985, 66-69), e.g., in that he construes the necessity of identity in terms of the principle (1) a = b ◆ $\Box$(a = b) and charges that the counterpart relation is incompatible with the S5 logic of identity. I am in agreement with Forbes's charge, but I take the S5 logic of identity to constitute an incorrect

'unproblematic'. Lewis comments (1986, 192-193) that 'nothing can ever fail' to be self-identical and that 'two things never can be identical'. If, however, identity is necessity-involving, on Lewis's account that would entail that either accessibility relations or counterparthood comes into play. Since identity relations pertinent to concrete entities cannot be expressed in terms of necessary truth, it would have to be counterparthood which pertained. Now a standard objection to counterpart theory, namely that what happens to a counterpart of Humphrey is irrelevant to Humphrey himself,[108] acquires additional acuity. Humphrey's self-identity holds of metaphysical necessity and that metaphysical necessity cannot be accounted for by talk of counterparts precisely because the necessity concerns a relation of Humphrey to himself. So, neither the reduction of the standard modal operators to quantification over worlds nor the apparatus of counterpart theory can encompass identity relations pertinent to concreta. Self-identity cannot be accounted for via counterpart theory, nor can it be accounted for via unrestricted quantification over worlds. (The latter point is bolstered by the recognition that the necessity of self-identity is not logical necessity, at least so far as concerns concrete objects.) So, it again appears that an extra-modal analysis of all modality

---

explication of the necessity involved in identity (for at least a large class of entities), since that necessity is *de re* and the principles operant in the logic are equipped to handle neither modal attributions *de re* nor the *de re* modal-notional truth which expresses the general claim that where identities hold they hold of metaphysical necessity. Forbes (1985, 177-179) seeks to save counterpart-theoretic semantics for *de re* modal attributions about artifacts by rejecting (1) via a rejection of the principle $\Diamond(\Diamond x)\Diamond(x = x)$ from which, in conjunction with Leibniz's Law, the former principle is held to be derived. Forbes points out that the counterpart relation is a fuzzy relation introduced by *de re* sentences, and that where artifacts are concerned, there is no firm intuition to rule out exceptions to (1). Whether or not this is so, Forbes's strategy does not resolve the problem I point to, since I point out a problem for the Lewisian when identity is construed in terms of metaphysical necessity *de re*, not logical necessity.

[108] E.g., Kripke (1980, 45 nt. 13). Forbes (1985, 65-66), after Hazen (1979, 321) dismisses the objection on the grounds that it misrepresents the counterpart theorist's semantics. Kripke, in commenting that, according to the counterpart theorist, when we attribute a *de re* possibility to Humphrey, 'we are not talking about something that might have happened to *Humphrey* but to someone else' does misrepresent the counterpart theorist's semantics, because it is not what *might* happen to the counterpart which is held to be relevant, but what *does*. Nevertheless, it might still be objected that something which does happen to a counterpart Humphrey is irrelevant to what is *de re* possible for the actual Humphrey. (Cf. Rosen (1990, 349). The non-misrepresentative version of the objection is given by Weiss (1980, 202), who comments that 'possibility for *this* paper is identified by Lewis with *actuality* [at another world] of *that* paper'—although the use of the latter indexical is inappropriate.) The objection highlights the conflict between our modal intuitions concerning the truth values of *de re* modal claims and the Lewisian semantics for such claims. 'I can speak Arabic' and 'I might have learned Arabic' can have neither the same truth conditions nor the same truth-values: the truth of one precludes the truth of the other. By the lights of Lewis's semantics the two claims differ in neither respect. This constitutes a *reductio* of the theory. (Like all theories which construe *de re* modality as relativized logical modality, Lewisian theory is semantically ill-equipped to cope with the distinction between possession of an ability and possession of the capacity to acquire the ability.)

is elusive. In addition, as Plantinga (1974, 111-114) observes, Lewisian semantics has it that Socrates is not necessarily identical with Socrates, since his counterparts are distinct from him. Lewisian semantics secures the truth of the general claim that *necessarily, everything is self-identical* but fails to secure the truth of the particularized claim that *it is necessary for Socrates to be identical to Socrates*. Socrates's self-identity is, in the terms of Grossmann (1983, 173), 'an instance of the ontological law that every entity whatsoever is identical with itself'.[109] So far as objecthood is concerned, this 'ontological law' is, by the lights of my modal epistemology, a necessary *a priori* truth. Where concreta are concerned, I take it, unlike Plantinga, that its instances are not of the essences of the objects they involve. Particular instances of the law constitute true statements of metaphysical necessity *de re*, but this is insufficient for their essentiality with respect to their objects. Particular instances of the law are, on my account, not dependent upon the natures of the entities they involve: the former are not explanatory with respect to the abilities of concrete objects.

On the modal epistemology offered at 2.2, knowledge of concrete identities is a species of substantive modal knowledge which derives from a conceptual truth about the notions of objecthood and identity and an empirical premise relating to a concrete particular. The major premise, although itself necessary, contains an embedded *de re* necessity. If this account is correct then the counterpart theorist cannot account for a given thing's being such that it is necessary for it to be identical with itself by claiming that all of the thing's counterparts are such that it is necessary for them to be self-identical. This cannot be done because irreducible necessity *de re* is still involved. The best the counterpart theorist can hope for is: (i) a worldly explication of the necessity of the claim that objecthood involves self-identity, since (unrestrictedly) all objects are self-identical, and (ii) the claim that all of the counterparts of an object are self-identical and that this makes it true that it is necessary for the object to be self-identical. This seems to leave the theorist with no means to account for truths about our *de re* modal notions (contrast substantive *de re* modal truths).

There are several reasons, then, why we ought to be suspicious of the Lewisian's claim to have provided a genuinely extra-modal analysis of our modal idioms. Furthermore, even if success can be achieved where some of these idioms are concerned, that does not establish the wider aim of banishing all appeal to primitive modality.

Other purported reductions do not succeed in eradicating primitive modality. The standard twentieth-century empiricist account of modality involved attempting to reduce the modal to our linguistic conventions. This account was concerned to reduce the logical modalities; modality *de re* was either rejected or classified as 'linguistic' by fiat. Radical conventionalism, as specified by Dummett [1959](1978, 170), is not a form of reductionism: it depicts necessity as consisting in nothing more than 'our having expressly decided to treat [a] statement as

---

[109] Cf. Grossmann (1983, 177) and Plantinga (1974, 111).

unassailable'. Beside the fact that radical conventionalism (like moderate conventionalism) could at best account for modal attributions *de dicto*, it provides an implausible account of logical necessity, in that it fails adequately to distinguish between dogmatically accepting a statement and deeming it to be logically necessary, and it fails to accommodate our acceptance of certain statements, such as (on a classical account) Goldbach's conjecture, as if true then necessarily true.[110] Further, since only finitely many such decisions can be made the view has the implausible consequence that there is a finite number of necessary truths.[111] Moderate conventionalism, which was the logical positivists' preferred view, is a reductionist thesis according to which the class of necessities includes both our linguistic conventions and those truths which are true in virtue of those conventions. Moderate conventionalism is discredited because it results in a regress.[112] The class of necessities is to include not just our linguistic conventions themselves, but their *consequences*. There is no way to explain the consequence involved without appeal to the very notion which is supposed to be up for reduction.[113] If necessity reduces to our linguistic conventions then the necessity involved in the consequence would have to so reduce: therein is the regress.[114]

---

[110] Cf. McFetridge's critique (1990, 150) of the non-cognitivism about necessity advanced by Wright. Wright's position is inspired by his own interpretation (e.g., 1980, 372-373, 375, 379) of the intent of the later Wittgenstein's account. Wright distinguishes between radical conventionalism as described (and attributed to Wittgenstein) by Dummett (*loc. cit.*) and the position which Wright attributes to Wittgenstein. Wright seeks, and sees Wittgenstein as having sought, to advance a conventionalism which is non-cognitivist but which does not suffer from what Wright views as the incoherence of the radical conventionalism described by Dummett. (Wright (1980, 379): 'The [non-moderate] conventionalist must hold that we are not *required*—by the constraint of conformity to the facts, or whatever—to accept the new necessary statement which we allow; but neither [*contra* Dummett's interpretation of Wittgenstein] do we have a freedom intelligible in terms of the idea of arbitrary choice.' Cf. Stroud [1965](1971).) Nevertheless, McFetridge's criticism is generally applicable to non-cognitivist conventionalism.

[111] The point is emphasized by Putnam [1979](1983, 116) and Hale (1996, 107). Radical conventionalism is thus, for example, unable to account for arithmetical necessities.

[112] This apparently unassailable objection is due to Quine [1936](1966, 96-97), cf.: Pap (1958, 167, 419); Dummett [1959](1978, 169-170); Putnam [1979](1983, 116); Mounce (1981, 114-115); Hale, (1996, 107-108). J. Bennett (1961, 20) describes this as an 'invalid objection to modified conventionalism' on the basis that the demand for a reduction is 'absurd': this misses the point that the objection works against the position precisely because the position is intended to supply a reduction (cf. Wright (1980, 350-351)). Shalkowski (1996, 375-381) criticizes attempted linguistic reductions of the modal, contending that, like Lewisian reductionism, they fail to meet the conditions of non-arbitrariness and non-circularity.

[113] Putnam [1979](1983, 116) puts the point thus: 'The "exciting" thesis that logic is true by convention reduces to the unexciting claim that *logic is true by conventions plus logic*. No real advance has been made.'

[114] The failure of conventionalist reductionism, awareness of the inadequacies of expressivism, and the desire to avoid a problematic, necessity-detecting faculty have prompted anti-reductionist conventionalist approaches to modality, such as that offered by

Combinatorialism, which attempts to reduce the modal to combinations between actual elements, is advanced by D.M. Armstrong (1986; 1989).[115] Armstrong's theory includes commitment to the following theses (1986, 576-577). Atomic states of affairs are held to be 'Hume distinct', i.e., logically independent. The constituents of states of affairs are simple (i.e. indivisible) individuals and simple properties and relations. Simple properties and relations are conceived of as simple universals. Armstrong subscribes to the Tractarian thesis that simple elements have all possibilities written into them: the totality of combinations of the elements provides for all possibilities. So, the possible is held to be dependent upon the actual in the sense that actually existing individuals and universals determine the possible. There are no disjunctive or negative properties. An individual cannot both possess and lack a given property, because, although conjunctions of universals count as properties, the only conjunctions of universals which are admissible are those which are actually instantiated (1989, 70). No individual can both have and lack a given property because no individual does possess contradictory properties (and there are no negative properties anyway).

Properties are regarded as ways that individuals are; relations as ways they stand to one another. Accordingly, there are no uninstantiated (or 'alien') universals. All individuals are such that they possess at least one property. That is to say, individuals exist only in states of affairs: there are no bare individuals (1986, 578; 1989, 43, 47). The possible is restricted by the actual in the sense that all possibilities are composed from actually existing elements, but actually existing combinations form a subset of possible combinations. Any statement which respects the form of atomic states of affairs constitutes a statement of possibility: if *a* is *F* in the actual world, *a* is *G* in another possible world. Armstrong summarizes the approach thus:

> The simple individuals, properties and relations may be combined in *all* ways to yield possible atomic states of affairs, provided only that the form of atomic facts is respected. That is the combinatorial idea. Such possible atomic states of affairs may then be combined in *all* ways to yield possible molecular states of affairs. If such a possible molecular

Wright (1980; 1986; 1989). Criticisms of such contemporary views are offered by Shalkowski (1996, 383-386). On my account (at 2.2) modal knowledge requires a rational faculty, but no mysterious necessity-detecting faculty: cf. Divers (1990) and Peacocke (1997). Wright (1989, 237) comments that 'the driving force behind non-cognitivism as a philosophy of modality has always been the belief that the cost of cognitivism must be epistemological extravagance or epistemological head-burying'. Realist conceptualism results in the former cost only by the lights of a hard-edged empiricism. It results in the latter only if an explanatorily viable account of the *a priori* cannot be provided: for a compelling attempt at such an account see Peacocke (1993).

[115] Armstrong is inspired by Skyrms (1981), reprinted as an appendix to Armstrong (1989). The reductionist intent of Armstrong's project is displayed by (1986, 575) and (1989, 47-48). Kim (1986, 597) provides an exposition of Armstrong's reductionist aspiration.

> state of affairs is thought of as the totality of being, then it is a *possible world*. (1986, 579; cf. 1989, 47-49)

In addition, the theory is modified to allow for 'expansion' and 'contraction'. Expansion allows for worlds in which there are individuals which do not exist in (i.e., are alien from the point of view of) the actual world. Contraction allows for worlds in which individuals and universals existent in the actual world are absent (1986, 580-586; 1989, Chapter 4).[116] Armstrong suggests that alien individuals are permissible via analogy, whereby they are taken to be like existing individuals, but simply quantitatively other than existing individuals.[117] Alien universals are held to be unacceptable since they would have to have their own natures or 'quiddities'. Since such quiddities 'are not to be found in the space-time world', they are unacceptable to a naturalistic theory of possibility such as Armstrong's combinatorialism (1986, 581; cf. 1989, 55-57). Only instantiated universals exist, and these set a limit to the possible universals. Accordingly, Armstrong concludes (1986, 582) that 'the denial of alien universals is a necessary truth'.[118]

Armstrong may not escape making appeal to primitive modality in setting up the basic apparatus of his theory. Possibilities are determined by simple individuals and relations. Armstrong states that the simples that exist are all and only the simples that could exist (although alien individuals are admissible via the method of analogy). The appeal to primitive modality might arise in relation to the characterization of simple individuals and universals.[119] Armstrong (1989, 51-53)

---

[116] Armstrong seeks to debar expansion, but permit contraction, for universals.

[117] Critics of this move include Kim (1986, 604-606), Bradley (1992, 215-216) and Bacon (1995, 66), the last of whom views it is as inconsistent with Armstrong's commitment to actualism.

[118] Armstrong (1989, 57) writes, less dogmatically:

> I have not proved the impossibility of alien universals, but it does appear that the impossibility follows from a certain theory of possibility. If that theory is true, then alien universals are impossible. But it is an intelligible thought that alien universals are possible, if only because nobody, at this stage of philosophical inquiry, can *know* that he puts forward a true theory of possibility.

Universals also pose problems for the constructivistic and conceptualistic account of possibility advocated by Rescher (1975), since he has it both that possibilities 'are *intellectual constructions (entia rationis)* developed from a strictly actually-pertaining starting point' the elements of which are actual individuals and their properties (1975, 2) and that '[p]roperties must admit of exemplification, but they need not be exemplified' (1975, 6). Rescher thus seeks to establish his idealist theory of possibility such that possibilities are mental constructs from actual elements, whilst simultaneously denying the instantiation requirement. This anomaly is observed by Weiss (1980, 204-205).

[119] Cf. Newman (1992, 51):

maintains that there is never a necessity-involving relationship between a given simple individual and a given property. Armstrong takes this to constitute a rejection of essentialism, which indeed it does, since it constitutes a rejection of a necessary but non-sufficient condition—namely that some of the traits of individuals are had of metaphysical necessity *de re*—for the existence of essences. (Armstrong does not himself acknowledge this distinction.) Nevertheless, he holds that every such individual must possess some property, although there is no property such that the individual must have that property. Armstrong claims that he rejects an ontology of bare particulars on the grounds that:

> To be individuals, individuals must be *an* individual, must be *one* thing.
> But this demands that they 'fall under a concept' as Frege would put it,
> that they have some unit-making property. (1986, 578; cf. 1989, 43)

Now the 'must' here looks like a clear example of the 'must' of metaphysical necessity *de re*. Armstrong's rejection of bare particulars and his supposed rejection of primitive modality appear to be in tension, since it is unclear that it makes sense to deny that individuals have any necessary properties whilst asserting that they must have some unit-making property. *Having to have some property* looks like a candidate for being a necessary predicate of its bearer: even if there is no lower-order property such that an object must possess that property, the object's having to have some property is a higher-order property had of metaphysical necessity *de re*. Since the 'must' is involved in the characterization of simple individuals it cannot be reducible to those individuals. If it is to be accounted for along the lines of Armstrong's reductionism then it would have to reduce to properties and relations. Armstrong (1986, 587) writes:

> that a certain universal is or is not simple...seems to me to be a
> necessary truth. Certainly, it may be a question to be decided a
> posteriori to the extent that it can be decided. But it is not a contingent
> matter. It is what we might call a Kripkean necessity.

> A thing that is a universal and happens to occur just once has the
> potentiality for repeated presence, whereas a thing that is a particular
> and happens to occur just once lacks that potentiality. These...strike me
> as being brute facts. They are modal facts because if something is a
> universal then necessarily it is a universal, and therefore necessarily it
> can occur many times, whereas if something is a particular then
> necessarily it is a particular, and therefore necessarily it can occur only
> once.

(Cf. the characterization of the universal/particular distinction provided by Lowe (1989, 38; 1994b, 532) according to which universals are instantiable and particulars instantiate but are uninstantiable.) Newman rejects the possibility of an extra-modal analysis of the modal throughout the chapter, which includes a discussion (1992, 69-72) of Lewisian reductionism. That discussion is less intricate than Divers (1997) and more forthright in its denunciation of reductionism.

This claim again appears to be in tension with others made by its author. The claim that it is a necessary truth that there are no alien universals means that there are no worlds in which there are universals that are not instantiated in the actual world, not that all actually instantiated universals are instantiated in every world. Now if it were a necessary truth that a given universal is simple then that universal would have to be instantiated in every world: but contraction is provided precisely to avoid the requirement for such instantiation. Simples are characterized by Armstrong in modal terms. He does not show that those modal terms can themselves be explained by appeal to his own theoretical apparatus. It appears that in characterizing simples Armstrong either posits brute modal facts or makes arbitrary stipulations on controversial matters for the sake of consistency with his account. Since the very notion of simplicity required by Armstrong's theory appears to be such that its sense can be conveyed only in terms which employ modal vocabulary,[120] the theory stands accused of employing primitive modality.[121]

An epistemological objection to Armstrong's theory is that it is incompatible with the *a priori* status of logic. That concrete individuals cannot have contradictory properties holds *a priori*, as a matter of logic, if it holds at all. In proposing that mere possibilities depend upon the actually existent simples Armstrong appears to award paradigmatically *a posteriori* status to all mere possibilities. In accordance with the approach to modal epistemology proposed earlier in this chapter, it is mistaken to portray the determination of logical modalities as dependent upon the *a posteriori*. Armstrong does not pay much attention to the issue of the epistemology pertinent to modality-involving axioms and principles of inference, although his account would seem to involve their being dependent upon the *a posteriori*, since the fundamental restrictions on possibility deriving, for example, from supposed necessary truths about universals, are held by him to be paradigmatically *a posteriori*.[122] I have already argued for their *a priori* status. I suggest that it is more likely that such principles (e.g., that actuality entails possibility) have a role in shaping the theory offered by Armstrong than that they can be shown to reduce to the factors provided by the apparatus of that theory. *A posteriori* means can provide us with neither modality-involving axioms nor principles of deductive inference. Even if there *were* necessary *a*

---

[120] Pap (1958, 408) suggests that the notion of simplicity implicated in logical independence theses (e.g., the thesis of 'Hume independence' adopted by Armstrong) is such that 'the concept of entailment, or alternatively the concept of possibility, must be used in stating this requirement'.

[121] In relation to this charge and to others below, it should be noted that it remains to be seen whether Armstong's account might be rescued via means similar to those advanced on behalf of the Lewisian by Divers (1999). Practical constraints preclude me from pursuing this issue here.

[122] E.g. (1986, 587; cf. 1989, xi), where necessary truths about universals are characterized as exhibiting 'Kripkean necessity'.

posteriori truths, the identification of the modal status of such truths could not be established via purely *a posteriori* means. Armstrong's naturalism would appear to construe logic as an *a posteriori* science, but whatever the observation of the concrete realm can do it cannot supply us with the apparatus of deductive reasoning.

Armstrong acknowledges that the principles of inference employed in the construction and defence of his account of possibility raise problems as to their own status:

> I postulated a certain structure for the world which yields a certain theory of possibility, and I reasoned about this structure. Possibility was defined using that structure. But...what of the status of the postulation and of the theory, and, again, the principles of reasoning used in their development? Are they to be taken as necessary truths? If they are necessary, how are they to be brought within the scope of my theory? (1989, 138)

> In drawing consequences, I was deducing. But what is the status of the principles of deduction thus tacitly employed? It seems natural to treat these principles as necessary truths. But given the general theory they are used to develop, what is the force of calling them necessary? (1989, 138)

Armstrong makes three points in relation to such difficulties. Firstly, he suggests that many of the claims made and the principles of inference employed in the construction and defence of the theory are '*analytic*': they are held to be 'true *solely* by virtue of the meanings of the symbols employed in the statement' (1989, 138-139). He invites us to recall

> that by 'property' should be meant 'ways particulars are' and by 'relation' should be meant 'ways individuals stand to each other'. *If* these are correct definitions (I pass over the truly delicate question of how to establish this antecedent), then it is analytic that properties and relations demand particulars to instantiate them. And, it would seem, analyticity of this strong sort yields necessity *without* appeal to Combinatorial theory. (1989, 139)

He proceeds to point to the plausibility of the claim that *modus ponens* 'flows from the *very meaning* of "if...then..."' (1989, 139). Various problems arise in relation to this first response to the difficulties. Firstly, even if it is true that this 'strong' analyticity 'yields necessity without appeal to Combinatorial theory', the question remains as to whether the necessity can be analyzed via the theory. With the benefit of the insights afforded by Divers (1997), Armstrong might be seen, in his emphasis upon necessity arising from *meanings* here, as suggesting that the

necessity in question, given its intensional source, arises independently of his theory, which provides a *metaphysics* for modality. Thus, the necessity in question arises independently of commitment to that metaphysics. However, this would undermine the claim made by Armstrong (1989, 48) that his combinatorial theory renders a reductive analysis of the *notion* of possibility. The commitment to a reductive metaphysic does not necessarily furnish an account which is non-primitivist at the level of meaning.[123] In order to provide a reductive analysis of modality which succeeds in doing more than registering a commitment to the ontologically derivative status of modality, it has to be shown that modal notions can be accounted for non-modally. Thus, the issue is not whether 'strong' analyticity yields necessity without appeal to combinatorial theory, but whether that analyticity can be accounted for non-modally via notions employed in that theory which are themselves either explicable non-modally or explicable via modality-involving notions which are conceptually prior to the very notions of necessity and possibility which they involve. Secondly, just as Divers identifies ambiguity in Lycan's suggestion that 'world' *means* 'possible world', so we may accuse Armstrong of ambiguity in claiming, for example that 'property' *means* 'ways particulars are'. Armstrong's casting of the relationship between these terms in prescriptive terminology does not help, since it lays him open to the charge that he affords no analysis of modality by stipulating the meanings of certain terms employed in a reduction of the modal. Setting that to one side, and more importantly, it is unclear whether such claims are to be taken as expressing commitments as to the extensions of the terms at issue or specifications of their intensions. Since Armstrong emphasizes analyticity, and independence from combinatorial theory, it appears that he is concerned with the latter, but this is not clear given that his original claims appear under the heading 'Sketch of an Ontology' (1989, 38) and concern, e.g., what properties 'are to be thought of as' (1989, 43), i.e., what sorts of things they are to be conceived of as being, not the intension of 'property'. Armstrong's claims suggest a commitment to the claim that 'instantiated universal' is an analytic definition of 'universal'. It might be objected, however, that there is no extra-modal analysis of this claim to be had if it is held to exhibit a necessity not explicable via appeal to the apparatus of combinatorial theory itself. In addition, the charge might be levelled that Armstrong's explicit commitment regarding the extension of 'universal', i.e., the instantiation requirement, in that it dictates that the only universals which can exist are those which are instantiated in the actual world, falls foul of Divers's (not untentatively) proposed condition on non-circularity (NC2).[124] Thirdly, the combinatorialist, like any modal reductionist, faces the difficulty of explicating the necessity which must attach to the equivalences which he posits between modal

---

[123] Armstrong himself recognizes metaphysical approaches which 'might be said to be ontologically reductionist, without being semantically reductionist' (1989, 104).

[124] A similar concern seems to pervade Newman's critique of Armstrong. The seriousness of the charge will depend upon the defensibility of (NC2), which Divers admits (1997, 159) might require to be bolstered further, as a condition upon non-circularity.

and reductive terminology: their necessity is a necessary condition upon their non-arbitrariness.[125]

This last problem relates also to Armstrong's second proposal concerning the difficulties concerning the theses and rules of inference involved in the construction and defence of the theory. He suggests that he might have to be committed to the postulation of truths which are classifiable neither as necessary nor as contingent.

> Where necessity and contingency are analysed by means of a certain theory, the Combinatorial theory, then the price that may have to be paid is the denial that the theory itself is either necessary or contingent. I do not think the price is too high. (1989, 139)

Armstrong is here confronting a similar problem to that faced by Wittgenstein concerning the status of the contents of the *Tractatus*, but where Wittgenstein denied them genuinely propositional status, Armstrong adopts the more contorted position that the theses of combinatorial theory are true, but have no modal status.[126] It is difficult to see how this move can be defended other than in so far as it is intended to save the theory: it has a definite air of arbitrariness. In addition, this mooted response would not be sufficient to cope with the reductionist's equivalences between modal and supposedly extra-modal discourse because, as has been mentioned, these have to have a certain modal status, namely that they hold of necessity, if the proposed reduction is to provide non-arbitrary truth-conditions for modal claims. Furthermore, the stipulation that there is a species of truth with no modal status might justifiably be said to constitute an unacceptably strong revision of our pre-reductive intuitions. The proposal would presumably entail that other theses, such as the commitment to the necessary truth of the statement that there are only instantiated universals, would have to be revised. This in turn would have the uncomfortable result that, if it is merely true (but neither contingently nor necessarily true) that there are only instantiated universals, then the statement would appear to be unequipped to restrict possibilities, if, that is, we make the plausible assumption that a statement which is restrictive of possibilities cannot itself be devoid of modal status. Armstrong's proposal would suggest a rejection of the idea that only necessities restrict possibilities. Accordingly, the proposal has little claim to intelligibility.

Armstrong's third response to the problem is to state (1989, 139) his hope, rather than his conviction, that his theory does not employ primitive modality, and to state that even if it did, it would still count as a worthwhile modal theory in so far as it attempts 'to exhibit in a perspicuous manner the *structure* of

---

[125] This echoes Divers's discussion (1997) of Lewisian reductionism.

[126] Consider the opening gambit of Divers (1999, 217): 'The principle of modal ubiquity—that every truth is necessary or contingent—and the validity of possibility introduction, are principles that any modal theory suffers for failing to accommodate.' Armstrong's combinatorialism, at least as it stands, can accommodate neither principle.

modality'.[127] The third response, then, although unobjectionable in itself, does not serve to rescue the reductionist credentials of the theory. Armstrong comments that he does 'not like the idea that modality is a fundamental, unanalysable feature of reality', because he believes that this presents 'great epistemological problems' (1989, 139-140). This comment is intended to be expressive of the contrast between reductive and non-reductive modal theories. It illustrates a crudity in Armstrong's appreciation of reductionism and primitivism, which is related to the general intension/extension ambiguities in discussions of this issue which are identified by Divers (1997). As I have emphasized, the primitivist need not posit that actuality itself is modal in nature: minimally, all that the primitivist claims is that modal *notions* are up neither for elimination nor for reduction to non-modal notions. The problem for Armstrong's account which is at issue, relating to the modal status of the contents of the theory and of the reductive equivalences it must posit, is not one of ontology, but of conceptual priority.

2.4 Conclusion

It has been suggested that modal eliminativism is untenable due to global problems which call its very coherence into question. Linguistic versions of modal reductionism, as has been long and apparently unassailably established, generate an infinite regress. It is open to question as to whether more recent attempts to reduce the modal to the non-modal succeed. Besides the dubious metaphysics and epistemology associated with these attempts, it has yet to be demonstrated that they do not collapse into primitivism. There is nothing theoretically, metaphysically or epistemologically objectionable about the minimal primitivist's thesis that modality is up neither for elimination nor for reduction. Accordingly, modal primitivism is vindicated.

---

[127] Bradley (1992, 219) argues that Armstrong's theory does fail to be genuinely reductionist on the ground that the crucial 'notion of respecting the form of a state of affairs, as Armstrong employs it, is...irremediably modal'. Bradley claims (1992, 220) that the early Wittgenstein 'took pains to point out the modal nature of the notion of form' (this claim seems to be borne out by the early parts of the *Tractatus*, esp. 2.0141, 2.033) and that, unlike Armstrong's account, Wittgenstein's account of modality was explicitly primitivist.

Chapter Three

Modal Realism

Once the case for modal primitivism has been established, the fundamental choice which remains is between the broad options of realist modal primitivism and anti-realist modal primitivism. For the sake of this discussion the former will be defined as the view that at least some modality inheres in reality,[1] the latter as the view that, despite the primitiveness of modality, no modality is so grounded. Only realist modal primitivism challenges the thesis (common to rigid actualism and Lewisian possibilism) that the actual is non-modal. I defend realist modal primitivism both by arguing against the opposition and by setting out the case, independently of the shortcomings of the opposition, for favouring realism. Anti-realist modal primitivism can be characterised as a sort of 'anti-realist conceptualism', in the terminology of Wiggins (1980, Chapter 5). Anti-realist modal primitivism is anti-realist conceptualist in that modality is regarded as having purely mind-dependent status: it is not to be identified with conceptualist reductionism, which holds the further thesis that modal notions reduce to non-modal notions.

3.1 Anti-Realism I: Against Projectivism

Anti-realist approaches to modality which may qualify as primitivist are various. We might envisage a theory which endorses error theory but also holds, contrary to eliminativism, that modality is indispensable or that it is dispensable in principle but ought not to be eliminated.[2] Such an approach would not be inten*t*ional in Blackburn's sense, since error theory operates from within the standard truth-conditional rubric. Nonetheless, it would attribute purely conceptual status to modality.[3] (Such an error-theoretic but non-eliminative approach would be

---

[1] So, on this account, the realist modal primitivist need not be committed to the view, expressed by Fisk (1973, e.g., 44), and suggested by Fine (1994), that *all* objective modality is grounded in the natures of things. The view of Weiss (1980, 212) compares with those of Fisk and Fine.

[2] Non-eliminative varieties of error theory are described by Railton and Rosen (1995, 434-435).

[3] Fisk (1973, 28-29) contrasts 'the real' with 'the intentional' in respect of necessity. His terminology is at variance with that employed here in that he applies the latter term to non-projective anti-realist conceptualism.

conceptual in this metaphysical sense, but not in the epistemological sense according to which there is modal knowledge via knowledge of concepts.)

Subsequent to my discussion of the realism favoured herein, I will turn my attention to the general thesis that the actual is non-modal. By taking issue with this thesis I hope to discredit anti-realist primitivism of whatever hue. In this section, however, one of the main strains of anti-realist primitivism, namely projectivism, will be independently discussed.

Projectivism about modality holds that modal discourse has a non-representative function: it has some role other than the statement of (standard) facts, such as the expression of attitude. There are some fairly well-known objections to expressive theories (which take their most familiar form in an objection to the emotivist's claim that moral discourse is non-factual). It would be dishonest to pretend that these can conclusively discredit a projective account of modality, but they do have considerable persuasive force. The central problem which confronts the projectivist is how to account for the propositional behaviour of the discourse deemed expressive: the anti-projectivist will take exception to the projectivist's denial that locutions which are, on the surface, truth-conditional, merit genuinely truth-conditional status. If, as the projectivist would have it, the meaning of any statement in a given discourse is (nothing but) expressive, then the problem arises as to how such a statement can feature in a context with which such an account is not harmonious. An example of such a context is argument by *modus ponens*. Ethical projectivism may be objected to on the grounds that a purely expressive account of the meaning of moral discourse is implausible given that ethical statements can feature in apparently valid arguments such as:

> (1) If lying is wrong then getting little brother to lie is also wrong.
> (2) Lying is wrong.
> Hence
> (3) getting little brother to lie is wrong.[4]

In (1), *lying is wrong* is not an evaluation: this appears to undermine the emotivist's thesis that it has purely expressive meaning. This complaint may also be raised against modal projectivism.[5] Constructions incorporating modal idioms can feature in such apparently valid arguments. Given that, on a standard account, attitudes are taken not to feature in logical relations such as entailment, the projectivist must provide an alternative account of what is going on in such cases. The projectivist will proceed either by denying that the discourse in question should properly be considered to partake in such relations or by seeking an

---

[4] Blackburn (1984, 189f) is well aware of the difficulty. This example is a modified version of Blackburn's own: it is provided and discussed by Hale (1986, 71f). Both the point and this form of example originate from Geach (1972, 250-269, esp. 268).

[5] Blackburn seeks to provide a quasi-realist projectivist account of moral and modal discourses. He does not point to any substantive difference between the two cases as to how this account is to be constructed.

alternative account of such propositional behaviour (which, in this case, amounts to an account in some terms other than those employed in the standard account of the notion of logical validity). Blackburn adopts the latter course: the function of the 'quasi-realism' with which his projectivism is combined is to explain, and preserve, the propositional behaviour of the purportedly projective discourse. The alternative to logical validity which Blackburn proposes is attitudinal approval. Rather than the conclusion in the above argument following, in the traditional sense associated with logical entailment, from the premises, the argument is explained such that: the consequent in (1) follows from the antecedent in the sense that if the antecedent expresses the appropriate ethical attitude, then the acceptance of the consequent is the appropriate ethical attitude; given that (1) and (2) express appropriate moral attitudes, it is attitudinally appropriate to accept (3). There is no (traditional) logical entailment involved here. Both the holding of the conditional and the legitimacy of the inference from premises to conclusion are explained by reference to attitudinal appropriateness. The failure to recognize that the consequent follows from the antecedent is a moral-attitudinal failure, rather than a failure to recognize logical entailment. Someone who rejects the inference from premises to conclusion cannot be said to lack the competence to recognize, or accurately opine upon, logical validity, since it is moral-attitudinal appropriateness, not logical validity, which is pertinent.[6]

Blackburn does not deal explicitly with the occurrence of modal idioms in arguments which are traditionally regarded as valid. It would appear that modal cases could not be implanted in the explanatory framework which Blackburn provides for moral cases without some prior tweaking of the account. The failure to recognize that a modal consequent follows from the acceptance of a modal antecedent cannot be an identical sort of attitudinal failure as that displayed in the first (moral) case: that failure was a moral failure, whereas the one with which we are now concerned must be interpreted as a modal failure. Wright emphasizes that the problem remains that the failure to accept an argument considered valid on the traditional account is *irrational*: it is not solely a moral (nor, we will add, modal) *attitudinal* failure. Wright (1988, 47-48 n. 19) gives the following example,

> Provided that stealing is wrong, and that, if stealing is wrong, encouraging others to steal is wrong, then encouraging others to steal is wrong

the point of which is to illustrate the claim that the failure to accept as valid arguments such as (1)-(3) above involves a failure of rationality. No moral attitude towards all or any of the statements in the antecedent of Wright's example is necessary in order to recognize that the consequent does indeed follow from the antecedent. One ought to accept the conditional, regardless of one's moral attitudes (and indeed regardless of the appropriate moral attitude). Wright's example

---

[6] Cf. Wright (1988, 32-33) on these expository points.

isolates the rational element in arguments employing moral discourse, facilitating its recognition in arguments in which moral evaluations do occur. The projectivist, then, still has a case to answer concerning the propositional behaviour of moral and modal discourse. The predisposition to regard the sorts of inconsistencies under discussion as logical, and not merely attitudinal, has not been overcome.[7]

Another difficulty for the projective account, emphasized by Hale (1986, 78-79) and Wright (1988, 34), concerns iterated modalities. According to the projectivist, a modally qualified locution asserts no facts. The modal attitudes which modal idioms express are attitudes to propositions, but a modally qualified proposition, taken as a totality (i.e. the proposition plus the modal modifier) is not itself a proposition, since it is expressive rather than fact-stating. The problem for the projectivist is that this account precludes iterated modalities from featuring in well-formed constructions. On the projectivist's account, 'necessarily, necessarily *p*', and equally, 'necessarily, possibly *p*', cannot be well-formed since 'necessarily *p*' and 'possibly *p*', although well-formed, are not propositions. Modal idioms are taken to qualify propositions, not expressive discourse: 'necessarily *p*' is expressive, so 'necessarily *p*' cannot be qualified by a further modal operator. Modal projectivism thus renders iterated modalities unintelligible and is incompatible with their featuring in modal logic. Given that iterated modalities are generally regarded—by those who regard modality as intelligible—as intelligible and that they are admissible within,[8] or feature in the axioms of, each of the usual systems of modal logic, the onus is on the projectivist either to convince us that the failure of projectivism to accommodate them is not unsavoury or to attempt to reconcile them with the projective account.[9]

A further point is especially relevant to the project in which this chapter is ultimately engaged. As the previous paragraph notes, the projectivist treats modal idioms as functioning solely as sentential operators. This leaves room only for *de dicto* modalities. On the credible assumption that *de re* modal locutions are grammatically irreducible features of natural language, it follows that the projectivist's account is incomplete. This incompleteness rests upon no prior endorsement of any metaphysical position. A very closely related issue is that the account apparently fails to accommodate the common distinctions between different kinds of necessity and possibility with which philosophers are acquainted, regardless of whether or not they would grant them endorsement. Hale (1986, 79) relates this to the issue of the presence, or avoidance, of vicious circularity in the projectivist's account of modality. On the projective account, in modally qualifying a proposition we are expressing an attitude: that attitude is a modal attitude. In treating a proposition as possible I express (but do not say

---

[7] Further debate on the issue occurs between Schueler (1988) and Blackburn (1988), and Hale (1993a, 1993b) and Blackburn (1993).

[8] Cf. Hughes and Cresswell (1996, 51).

[9] Shalkowski (1996, 382) rejects modal projectivism on the basis of the objections raised by Hale.

anything about) an ability of mine to accept it, imagine it, or what have you; in treating it as necessary I express the relevant inability. What is the nature of the notion of possibility appealed to in the projectivist's account? Hale points out that if it is logical possibility then the theory is circular. (There are good reasons why it cannot be logical possibility anyway since, *pace* Schlick [1938](1979, 311), the notion of *logical possibility for me* implausibly conflates logical and non-logical modalities.[10] In any case, the projectivist may be due the benefit of the doubt here.) Hale mentions that circularity in the account is avoided if the modality involved is psychological (as distinct from logical), but then the trouble is that this does not sit comfortably with the normative force allocated to logical modalities, which Blackburn (1984, 217) appears to want to preserve. If modal projectivism is intended to account for both logical and metaphysical modality (rather than being restricted to logical modalities), as there is good reason to think that it is, then it seems to be committed to regarding all modal talk as expressive of one and the same type of psychological attitude. Thus it appears to be committed to the view that there is only one sort of modal notion, pertaining to the relevant psychological modality. If indeed it is so committed then the projectivist has a considerable job of work to do in convincing us that the intuitions and practices which incline us away from such a view are misplaced or are assimilable into the projective view. If a credible defence of realism about modality *de re* is available then the prospects of a comprehensive projectivism are undermined. Independent of that, the projective account as it stands is incomplete due to its failure to accommodate a large class of ordinary modal discourse.[11]

3.2 Realism

According to the realist, there are ontologically grounded necessities and possibilities. The thesis that they are ontologically grounded need make no stronger a claim than that purely intentional and purely conceptual (i.e., intensional) accounts of modality are misplaced. The thesis does not entail that concepts are irrelevant to the metaphysics or the epistemology of modality. The argument I will support will be confined to discussion of modality *de re*. I seek to avoid commitment concerning the question as to whether modality *de dicto* is a subspecies of modality *de re*. I aim to establish that there is at least a range of modality *de re* which is neither dispensable nor (grammatically or ontologically) reducible. This lack of reducibility should here be understood to include a lack of

---

[10] Ayers (1968, 33-37) and Hacking (1975, 322-323) distinguish two sentential forms concerning two kinds of possibility: 'It is possible that *p*', and 'It is possible for *A* to *x*'. My suggestion is that logical possibility typically relates to the former, not the latter. Hacking's own view (1975, 332-334) is that logical possibility typically relates to the latter. I take up the issue in Chapter 4.

[11] Cf. the observation of A.R. White (1975, 174) that expressive and illocutionary accounts of modal terms exhibit 'a clear allegiance to a *de dicto* interpretation of their application'.

reducibility to modality *de dicto*. I will argue that a necessary but non-sufficient condition for the success of such a reduction, namely the holding of equivalence relations such that all modal locutions *de re* are translatable into modal locutions *de dicto*, cannot be met.[12]

Metaphysical Necessity as Distinct from Logical Necessity

I seek to establish the credentials of realism about objective non-logical modalities both as a means of undermining anti-metaphysics and to establish that the requirement for substantive metaphysical possibility cannot be usurped by attempting to use logical possibility as a surrogate. I seek to establish that metaphysical modalities do not reduce to logical modalities, and a large part of the rest of my project rests upon that view. (I emphasize that it is no part of my project to try to reduce logical modalities to metaphysical modalities: I try to remain neutral on this issue.) There is a *prima facie* acceptable assumption to the effect that logical necessity is *de dicto*. In accordance with this assumption, if primitive logical necessity were to be interpreted realistically that might involve a commitment to a certain sort of abstract entities, such as propositions. Thereby, *de dicto* necessity might be construed in terms of the *de re* necessities characteristic of such entities.[13] On such an account, logical necessity, although explicable in terms of *de re* necessity, would nonetheless be distinct from the sort of necessity which qualifies predicates in constructions concerning ordinary spatiotemporal entities.[14] One might deem the latter sort of necessity to be metaphysical, rather than logical. This is without prejudice to the view that some abstract entities (e.g., numbers) or metaphysically necessary beings (e.g., God) have essences. My contention is that metaphysical necessity concerns *concreta* (not necessarily to the exclusion of *abstracta*), whereas logical necessity does not. (We are, of course, free to hold that

---

[12] Thus Plantinga's strategy (1969, 248-257; 1974, 29-34), cf. D. Bennett (1969, 491-499), whereby appeasement of the sceptic about modality *de re* is attempted by *explicating* it in terms of modality *de dicto*, is impossible to follow. It seems that even if any such strategy could succeed, it might fail to appease the sceptic whose worry is metaphysical rather than semantical. In addition, the attempt of Fumerton (1986) to *reduce* essence to modality *de re* and modality *de re* to modality *de dicto* cannot succeed. Fumerton's discussion is all the less credible given that he (1986, 281) makes the mistaken claim that essential attribution and talk involving necessity *de re* are equivalent and his entire argument rests on the illegitimate assumption that definition is a sufficient condition for reduction.

[13] This, or a similar account, is implicit in Fine (1994), criticized by Hale (1996, 102-114), although matters are considerably obscured by Fine's misrepresentation of *de re* necessity *per se* in terms of necessary truth. A related view is suggested by Shalkowski (1994, 687), conditional upon the supposition that 'propositions and other linguistic units are entities...whether abstract or concrete', while Forbes (1986, 11-12) suggests that *de dicto* necessities are grounded in *de re* necessary features of properties.

[14] Even on Shalkowski's suggestion, logical necessity would still be distinct from the class of metaphysical necessity *de re*, since the former would concern only a subclass of all necessities.

human beings are natural entities whose rational operations are, so to speak, bound by logical necessity: by saying that logical necessity does not concern concrete entities I mean that the logical necessity operator does not *qualify* such entities or the predicates attributable to them.) So, that may be a reason for maintaining that logical and metaphysical necessity should be distinguished. My intention is to endorse a distinction between these species of necessity whilst remaining neutral on whether they are disjoined. My account excludes the possibility of metaphysical necessity being a subspecies of logical necessity or merely a restricted version thereof.[15] It does not rule out the converse.

There is another way of putting the matter, which relates to the notions of existence and contingency. Shortly, it will be illustrated by a consideration of an interpretation of an aspect of Leibnizian modal metaphysics. The identification of logical and metaphysical necessity is fairly common in contemporary discussions, both generally and in the interpretation of Leibniz. According to Slote:

> a property *p* is essential to an entity *e* if and only if *e* (logically or metaphysically) could not have failed to have *p*. A property *p* is accidental to an entity *e* if and only if *e* has *p*, but (logically or metaphysically) could have failed to have *p*. (1974, 1)

> I shall not distinguish logical impossibility from metaphysical impossibility. (1974, 1 n. 2)

This is ambiguous.[16] Slote may be expressing abstinence from attempting to elucidate any such distinction or he may be deeming metaphysical necessity and

---

[15] Farrell (1981) argues that metaphysical necessity is not logical necessity on the ground that metaphysical necessity is a variety of Popperian natural necessity. The argument involves a *de dicto* interpretation of metaphysical necessity (since Popperian natural necessity is held to qualify statements) and it involves a weaker distinction than that advanced here. In so far as Farrell's account is couched in terms of a contrast between logical necessity and the empiricist's physical necessity the conception of metaphysical necessity I advance escapes its attention. (In Chapter 4 I suggest that physical and natural necessity are subspecies of metaphysical necessity *de re* and that, as a consequence of this and the theses of the irreducibility of, and lack of adequate equivalences between, the *de re* and the *de dicto*, they are neither *de dicto* nor explicable in terms of the *de dicto*.)

[16] In my discussion of modal epistemology I have already emphasized the differences between essentialist necessity *per se* and logical necessity. The attack upon accounts (more explicit than Slote's) which portray essence in terms of logical necessity or necessary truth will be a recurring theme. Such accounts include: Sprigge (1962, *passim*), Plantinga (1974, *passim*), Bolton (1976, e.g., 517-518) and Jacob (1987, 532-533). Hoffman and Rosenkrantz (1994, 90 n. 1) claim to account for the concept of substance in purely *de dicto* terms, but this cannot be done if, as I maintain, even necessary truths concerning essentialist *concepts* include embedded modalities of an irreducibly *de re* character. Wolfram (1989, 112-115) specifies 'several senses' of 'essentialism', all of which concern belief in synthetic necessary truths. Although Sorabji holds that Aristotelian essences for destructible entities relate to modality *de re*, he nevertheless characterizes such essences in terms of necessary

logical necessity to be one and the same. Perhaps ironically, the following comment is expressive of a consideration which suggests the appropriateness of rejecting such an identification:

> In many or even most cases, an object can have properties essentially without having the property of existence essentially, without being a necessary existent. (1974, 1 n. 3)

This requires a distinction between metaphysical and logical necessity. Logical necessities hold independently of the existence of contingent existents. Metaphysical necessities, on the other hand, are attributable to entities of a sort which might not have existed, although this does not preclude them from being attributable to necessary existents.

We can now turn to Leibnizian metaphysics for an illustration of this point. There is a debate about the principle of the Identity of Indiscernibles as to whether it conveys a necessity and, if so, as to the nature of that necessity. Russell (1937a, Chapter V) argues that although the modal status that Leibniz himself wished to attribute to the principle is unclear, it should be regarded as logically necessary for the sake of congruence with Leibniz's system as a whole. Now Russell (1937a, 55) actually writes that the principle should be regarded as 'metaphysically necessary' but it is clear that he intends the term to designate logical necessity, since he depicts it as concerning that the opposite of which is self-contradictory and which contrasts with contingency (1937a, 65, 69). It is argued that since the Identity of Indiscernibles derives from the principle of Sufficient Reason it is logically necessary. I contest this view.

Leibniz, like Russell thereafter, uses the term 'metaphysical necessity' to designate truth in all possible worlds, i.e., logical necessity.[17] Nevertheless, I contend that Leibniz's philosophy employs the notion which I designate by 'metaphysical necessity', i.e., essentialist necessity as pertinent to (at least)

---

truths (1980, e.g., 215). Such confusions have typified twentieth-century philosophy since the heyday of logical positivism. Carnap [1934](1937a, 304) provides talk of the 'analytic' as the translation into the formal mode of philosophical talk of the 'essential'; this is especially odd given that he argues that the use of the latter but not the former idiom reduces to absurdity. We might take it, therefore, that Carnap holds that the former is the (legitimate) counterpart, rather than a literal translation, of the (illegitimate) latter.

[17] Leibniz, *Philosophical Writings* (1973, 96-97, 108). The use of 'metaphysical necessity' in these passages coincides with the use of 'logical necessity' in *New Essays* [1765](1996, 499). Cf. this fairly Humean tenet in accordance with his use of 'metaphysically possible': 'sugar could change into a switch' (1996, 412). Cf. Hume [1740](1938, 14): 'whatever we *conceive* is possible, at least in a metaphysical sense'. (The emphasis is Hume's. The quotation is meant to illustrate the comparably wide uses to which 'metaphysically possible', and paraphrases thereof, are put by Hume and Leibniz, rather than any kinship between their views of the relationship between conceivability and possibility.) It is clear that the natures of entities in the actual world do not restrict that which Leibniz would call metaphysically possible.

contingent beings. According to Leibniz, God *could not* have chosen any alternative to a truth which is logically necessary. Since the principle of Sufficient Reason does not have this privileged status, in that God *could*, although he does not, choose to breach it, the Identity of Indiscernibles cannot be said to hold as a matter of logical necessity. The latter principle is dependent upon the former: since the former is not logically necessary neither is the latter. (This, of course, is distinct from the issue of whether the latter follows from the former as a matter of logical necessity.) Sufficient Reason holds in the actual world: it is expressive of the essence of the actual world. Truths which hold in virtue of Sufficient Reason cannot be logical necessities. Rather, they express (what I call) metaphysical necessity: they are true in virtue of the nature of the actual world, but they are not logically necessary since some other world might have been created.[18] There is reason, then, for the maintenance of a distinction between logical and metaphysical necessity, quite apart from any commitment to the metaphysics of essentialism. The distinction concerns the *sense* of essentialist claims, not their truth or falsity. We need the distinction in order to understand what the essentialist is really claiming, regardless of whether we endorse any kind of essentialist metaphysics. Of course, someone, like Quine, who protests that essentialist attributions are unintelligible, will not find this to be of use. However, it is preferable to try to understand, rather than dismiss, such claims. My contention is that if the sense of such claims is to be adequately conveyed there is a requirement for a notion of necessity other than logical necessity. This does not constitute a commitment to a realist view of metaphysical necessity, although it does lay the Quinean critic of essentialism open to the charge that he is ill-placed to refute that which he has precluded himself from understanding.

Irreducible Modality De Re *and the Case for Realism*

I have maintained, and will seek to sustain, the claim that there are notions of metaphysical possibility and necessity distinct from the notions of logical possibility and necessity. My argument also has it that claims involving the former are neither reducible to nor wholly explicable in terms of claims involving the latter. I will proceed to attempt to defend realism about a class of metaphysical modality *de re* whilst seeking to uphold neutrality on the issue of whether modality *de dicto* should be treated as a subspecies of modality *de re*.

---

[18] Leibniz's use of 'metaphysical necessity' might be said to coincide with mine, in the sense that it relates to a *de re* impossibility, namely the impossibility for God to have created a world in breach of the principle of non-contradiction. (Hacking (1975, 336) notes that 'Leibniz keeps *de re* possibility separate from *de dicto* possibility, but [holds that] at the apex of creation the two concepts intersect'.) Nevertheless, Leibniz uses the phrase to signify truth in all possible worlds, whereas I use it to signify the modality which is involved in the characterization of the natures of contingent existents. The distinction between metaphysical and logical necessity I defend compares with that adopted by Moravcsik (1990, 101-102).

There is a grammatical distinction between modal locutions *de re* and *de dicto* (and between *de re* and *de dicto* readings of the same sentence) which has, as Burge (1977, 339) and Wiggins (1980, 107) indicate, been most prominently discussed in the Aristotelian tradition. The distinction is well-founded on the grounds of grammar alone. Recognition that *de re* locutions do not reduce to *de dicto* locutions entails no metaphysical commitment, so the recognition of the distinction as grammatically well-founded does not in itself constitute an assent to Aristotelian essentialism.[19] The intelligibility of essentialist attributions is immune to Quinean attack in that, on the *de re* reading pertinent to their proper interpretation, such attributions do not pose the problems with respect to referential opacity which are at the heart of the Quinean complaint.[20] (Since what Quine [1953](1966, 174) calls 'Aristotelian essentialism' involves only *sentential* modal operators it is not truly representative of a metaphysical thesis which involves a commitment to real modality *de re*. Indeed, it fails even to represent the idea that modality *de re* is intelligible. Even if Quine's account did provide for the logical form of essentialist theses, it would fail to establish that the use of that idiom commits us to *realism* about essence.)

On the assumptions, which I will substantiate in the next chapter, that modality *de re* and *de dicto* are distinct and that the former is not reducible to the latter, I should henceforth be understood to refer to the ontological issue when I use the word 'irreducibility' in the current chapter. My concern is now to establish that irreducible modality *de re* is, following what I take to be the strongest defence of essentialism currently available, namely Wiggins (1980), a feature of the reality with which an important class of our concepts are reciprocally related.

That there is irreducible metaphysical modality *de re* is a consequence of the theory of individuation defended in detail by Wiggins.[21] I will try to give a précis of his argument. The first two steps in the argument are:

---

[19] Burge (1970, 340) rightly emphasizes that the grammatical well-foundedness of the distinction is a quite separate issue from the metaphysical position of realism about modality *de re*. Cf. Sidelle (1989, 72), who regards the distinction as one of 'logical form', not metaphysics.

[20] This is illustrated by Hacking (1975) and Mondadori (1995, 229-234). Modal locutions *de re* containing terms with extensions exhibit no referential opacity. Phrases such as 'the number of planets', 'the price of wheat' and 'the colour of the sea' at best '"denote" a function in intension, an "individual concept"', writes Hacking (1975, 328). The problems of referential opacity attaching to modal locutions *de dicto* stem not from modality but 'from the fact that one is talking about a dictum' (1975, 327). Della Rocca (1996b, 187) comments that 'essentialists may be said to regard modal contexts as extensional and not intensional'. The comment is misrepresentative: essentialism requires that *de re* modal contexts are extensional, not that *de dicto* modal contexts are extensional.

[21] This would appear to be a theory in which, in the terms of Fine (1994), a definitional approach to essence is shown to have modal consequences. Although Fine mentions the *de re*, in effect he takes talk of necessary truth to be exhaustive of modal accounts of essence. That shortcoming is encapsulated in his claim (1994, 6) that 'any statement of necessity [is] necessarily true if it is true at all'. In addition, Fine (1994, 14-15 n. 2) misconstrues Wiggins

1.   Identity is not relative—i.e., not-**R**; Wiggins (1980, Chapter 1).
2.   Identity is sortally dependent but absolute—i.e., **D**; Wiggins (1980, Chapter 2).

In accordance with **D**, the sortal dependency of identity does not entail that there is a range of sortals from which we may more or less arbitrarily choose, thereby *determining* identity relations. The contrary view, that identity is relative to the sortal concept employed, is the thesis of the relativist (i.e., the '**R** theorist') about identity. The absolutist, in contrast to the relativist, holds that identity relations are not determined (merely) by our choice of sortal concepts: there is a (non-exhaustive) class of sortals which are sanctioned by reality.

Wiggins argues for the falsity of **R** and the truth of **D** on the basis that **R** consists in the denial of the principle of the Indiscernibility of Identicals (i.e., 'Leibniz's Law') to which there is no convincing alternative. So, since **R** is unacceptable, **D** must be preferred. According to the aforementioned principle, where *a* and *b* stand for entities, f and g for sortal terms, *a* cannot be the same f as *b* and yet not be the same g as *b*. More formally,

$$((\exists f)(a \text{ is the same f as } b)) \supset ((g)(g(a) \supset a \text{ is the same g as } b)).$$

This principle is denied by the **R** theorist and upheld by **D** theorists such as Wiggins (1980, 18-23) and Lowe (1989, Chapter 4). The distinction between substance concepts and phased sortals is introduced in discussing some of the proposed cases in which the relativist maintains that *a* is the same f as *b* without being the same g as *b*.[22] The relativist may claim, for example, that the man is the same human being as the boy but not the same boy as the boy. Far from this being supportive of the relativist's position, however, it shows that *boy*, a phased (i.e., temporally restricted) sortal, does not have a proper role in an elucidation of identity: that role belongs to the (temporally unrestricted) substance concept *human being*. Substance concepts are distinct from phased-sortals[23] in that the former are crucial in providing fundamental answers to questions such as 'what is *x*?'. They are temporally unrestricted in that an object subsumed under such a

---

(1976): the point of the latter is to illustrate the *de re* form manifested by essential attributions and to show how a *de re* account does not suffer some of the problems associated with an account of essence in terms of necessary truth. *Contra* Fine, it is *not* 'to claim that the de re modal statement does not give the correct logical form of an essentialist attribution'.

[22] Wiggins (1980, 23-25). Other supposed cases of relative identity are discussed (1980, 27-44) and a summary of the confusions inherent in putative examples of relative identity is given (1980, 43).

[23] The distinction is implicit in Brody (1973, 351-355; 1980, 20-24, 70-83) and Kirwan (1971, 54).

concept falls under the concept throughout the course of its (i.e., the object's) existence.

The first two steps in the argument are established on the grounds that there is no convincing alternative to Leibniz's Law, and that purported cases of relative identity are shown to rest on confusion (and in some cases to provide covert support for absolutism).

According to **D**, 'if *a* is the same as *b*, then it must also hold that *a* is the same *something* as *b*' (1980, 47); 'the *elucidation* [contrast reduction] of the identity "*a = b*" depends on the kind of thing that *a* and *b* are' (1980, 48). So, *a = b* ❑ ◌f (*a* is the same f as *b*). This is developed as follows:

> it is enough for everything to be something, and for *a = b* ❑ ◌f(*a* [is the same f as] *b*) to hold, if for all times *t* at which a continuant *a* exists there is a g under which *a* falls at *t*; or more perspicuously

> **D**(i): $(x)(t)[(x$ exists at $t)$ ❑ $(◌g)(g(x)$ at $t)]$.

> What this guarantees is only a *succession* of possibly different phased sortals for every continuant. (1980, 59)

In order to give due weight to the role of substance concepts as against phased sortals, the following principle is required:

> **D**(ii): $(x)(◌g)(t)[(x$ exists at $t)$ ❑ $(g(x)$ at $t)]$. (1980, 59)[24]

This gives due expression to an entity's falling under a determinate sortal throughout the course of its existence (i.e., to its falling under a substance concept, not a mere succession of phased sortals). Also, it relates to the distinction between those changes through which an entity can persist and those which constitute its passing away.[25]

So, there are correct answers to questions such as 'is *a* the same thing as *b*?'. Our arrival at these answers is dependent upon the employment of the correct sortal concepts. The paradigmatic substance concepts relate to natural unities,[26] since there are difficulties peculiar to other substance (or at least *virtual* substance) concepts relating, for example, to artifacts. It is not necessary for us to go into these difficulties here: for the sake of the establishment of our relatively minimal thesis that there is a range of irreducible metaphysical modality *de re* we will concern ourselves mostly with the paradigmatic substance concepts.

---

[24] The case of Lot's wife, which will be discussed later, arises (1980, 60, 66-67) as a purported counterexample to **D**(ii).

[25] This is expressed in the formulation **D**(iv) (1980, 68-69).

[26] Cf. Clark (1975, 50).

The third major step in the argument relates to a further development of **D**:

> **D**(v): f is a substance concept only if f determines either a principle of *activity*, a principle of *functioning* or a principle of *operation* for members of its extension. (1980, 70)

A natural kind term can refer if and only if 'there is some nomological grounding for what it is to be of that kind'; to be a thing of a particular kind is to exemplify its 'distinctive mode of activity' (1980, 80). Being a thing falling under a given natural kind concept is what Wiggins calls a 'deictic-nomological' matter. This captures the notions that being a thing of a given kind depends upon nomological grounding in actuality and that the answers to questions such as whether a given thing falls under the natural kind concept f, or whether any natural objects fall under a mooted natural kind term g, will be arrived at in the light of empirical considerations.

The fourth step elucidates the modal consequences of the theory of individuation outlined in steps one to three, and the connections between essentialism, conceptualism, and realism. In any instance, where the Aristotelian question 'what is *x*?' arises, the correct sortal concept to employ in order to reach the correct answer is determined by the nature of the thing, not just by our minds, conventions, or what have you. There are limits placed on the range of conceivability where the entities subsumed under a natural kind concept are concerned. Whether or not one can conceive of a thing *x* being ϕ will depend upon what *x* actually is: 'ϕ cannot assume just any value' (1980, 106). There will come a point in our conceiving when the value of ϕ is such that we cannot conceive of the thing having the property assigned by ϕ because to do so would no longer be to be conceiving of *that thing* at all. For example, *contra* Armstrong (1989, 51), we cannot conceive of Russell's being a fried egg, since we do not have it at our disposal to regard *human fried egg* as a sortal concept, there being no principle of persistence which could sanction such a mooted concept.[27] On this notion of conceivability, a thing cannot be conceived such that it does not exemplify the distinctive mode of activity of the objects subsumed under the sortal concept under which the thing is itself subsumed. (This point relates to Aristotelian considerations about change which will soon be discussed.) That a thing cannot be so conceived is a modal fact about the thing, rather than some expression of a psychological inability on our part or an assertion about some limit to the powers of the human imagination or some restriction imposed by more or less arbitrary conventions.[28] That the necessity involved here is metaphysical rather than logical

---

[27] Both Armstrong (1989) and van Fraassen (1977; 1978; 1980) are proponents of the view, described by Della Rocca (1996a, 4) as an 'unpalatable version of anti-essentialism', that things have no essential traits. (Della Rocca says he knows of no proponents of the view.)

[28] The import of this aspect of Wiggins's account apparently escapes Forbes (1985, 220-224) who erroneously characterizes Wiggins's approach as advancing a 'quasi-

is illustrated by its deictic-nomological character. The bounds of conceivability are determined by the nature of the thing; by its principle of persistence. This principle of persistence relates to the characteristic activity of the thing, which is expressed in irreducibly *de re* modal locutions. Substance concepts relate to the real definitions of things. They are what Wiggins calls 'extension-involving substantives' (1980, 233). The limits to the conceivability at issue concern metaphysical, not logical, necessity, precisely because they are determined by the deictic-nomological persistence principles of things. There should be no temptation to regard the modal restraint as epistemic here, since the entire account acknowledges that wherever an Aristotelian 'what is *x*?' question arises there is some known or unknown principle of persistence involved. Also, questions as to whether a mooted natural kind term will ultimately refer may not always be answered by the introduction of considerations relating to actual experience and existing knowledge: future experience will often be crucial (1980, esp. 82). What a thing can do and what it can or cannot endure, as well as what properties it can be conceived as having, are determined by its principle of persistence. The essentiality of a trait is such that 'the *very existence of the bearer is unqualifiedly conditional* upon the trait in question' (1980, 121).[29] Since the grammatical form of locutions employing the modality pertinent to essentialist claims (at least about contingent existents) is *de re*, not *de dicto*, and logical necessity is *de dicto*, regardless of whether or not it is also *de re*, it follows that the modality at issue is non-logical. We are now in a position to see that *de re* modality is not only grammatically well-founded, intelligible and acceptable, but also that Wiggins provides an argument supportive of realist modal primitivism.

   The crucial notion of a persistence principle has its roots in Aristotelian metaphysics and is strenuously emphasized by Leibniz. Hacking (1972) and Wiggins (1980, e.g, 80) both point to the notion, awarded much significance by Leibniz, of substance as an active principle of unity. This entails a notion of essence as dynamic: to be a thing of a particular kind is to manifest its activity.[30] Essence is manifested by the actualization of the real powers/potentialities of

---

psychologistic' view of the justification of modal concepts according to which 'the modal status of truths and falsehoods is ultimately grounded upon human intellectual abilities' (1985, 220). These matters are not even Wiggins's concerns. For Wiggins, whether or not we can conceive of *x* that it is *ϕ* is determined in large part by the nature of *x* itself. The restrictions on conceivability relate to what it is possible to conceive *of* an entity; to how it is possible *for* an entity to be conceived. They do not restrict the class of those propositions which it is possible, for the purposes of logic, to conceive *that* they are true. (The failure to distinguish between conceiving *de re* and conceiving *de dicto* colours Forbes's interpretation of Wiggins, and leads him to make it look as if modality *de dicto* is Wiggins's central concern.) I take up the point in the next chapter.

[29] Cf. Witt (1989, 107).

[30] Cf. N.P. White (1971, 194-195) and Witt (1989, 120) on Aristotle and Ishiguro (1972, 67) on Leibniz. Also, cf. Hegel [1812-16](1969, 546): 'What is actual *can act*; something manifests its actuality through that which it produces.'

objects.[31] Aristotle's notion of the *ergon* of a thing (e.g.: *Physics*, 194b14, 202a24; *Metaphysics*, 50a21)[32] is the source of this notion of essence as an active principle of unity. This notion of essence affords us some intuitively unproblematic epistemology: we are well-acquainted with the characteristic modes of activity of a large range of natural kinds. These are known *a posteriori*, albeit via conceptual mediation: natural kind concepts and experience are not divorced. (Recall the account of substantive modal knowledge *de re* provided at 2.2.)

On the view I have adopted, contrary to the views of the rigid actualist and the Lewisian possibilist, there is modality in nature. There are irreducibly *de re* modal predicates properly attributable to natural objects: predicates relating, for example, to disposition, capacity and ability, which, writes Wiggins, fail to have any 'natural *de dicto* translation' (1980, 107). Furthermore, these concern irreducibly modal features of the world. In the following paragraphs I will expand upon this realist view.

The notion of essence discussed so far is related to considerations about change which again go back to Aristotle. (Non-reductive analyses of different sorts of predication and of different sorts of change are the two main routes by means of which the Aristotelian tradition introduces and explains the category of substance.) From some unobjectionable distinctions between changes we can come to understand, and see the need for, the category of substance. First, we can distinguish between changes which are grounded in the thing and those which, although predicable of the thing, are *purely* relational. For example, after Christopher Martin (1988, 51-52), at t_1 Theaetetus is shorter than Socrates; at t_2 Theaetetus is taller than Socrates. Although the change is relational, it is grounded in reality. Specifically, it is grounded in the reality of Theaetetus's new height at t_2 which is the result of a process of growth. However, given that the real change which has occurred is due to Theaetetus's growth, it does not follow that Socrates has not changed. At t_2, but not at t_1, it is true of Socrates that he is shorter than Theaetetus. Nevertheless, Socrates has neither suffered nor initiated any *real* change with respect to his being once taller and now shorter than Theaetetus.[33] It is real change which is relevant to our discussion (and, historically, to the Aristotelian examination of change).

Among real changes we can distinguish, in Aristotelian terms, between those which, on the one hand, constitute generations (comings-to-be) and destructions (passings-away) and those which, on the other, constitute mere

---

[31] A distinction can be drawn between power and potentiality on the basis that the exercise of the former requires an event, whereas that of the latter requires a process. Cf. Elizabeth Prior (1985, 101) and the distinction between abilities and capacities implicit in 2.2.

[32] A rich account of this notion is provided by Clark (1975, esp. 14-27).

[33] Geach (1969, 72), upon whose account Martin's example is predicated, labels these two forms of change 'real' and '*mere* "Cambridge"'.

alterations in a persisting object.[34] Where an already existing object is concerned, there are certain sorts of event which it could suffer, or in which it could participate, through which it would persist. There are others which would constitute its destruction or replacement with something else. This Aristotelian distinction is employed by contemporary philosophers of Aristotelian influence who seek to establish the credibility of non-objectual modal realism. Like Wiggins, Brody (e.g., 1973, 351) emphasizes the metaphysical irreducibility of a class of *de re* modality. Brody (1973; 1980, Chapter 4) endorses the Aristotelian distinction between those sorts of change through which an object can endure and those which are incompatible with its persistence. The latter sort of change does not entail that there is complete annihilation. Rather, that there are certain changes which a thing *a* of a kind f cannot suffer without ceasing to exist is compatible with the replacement of *a* with some thing(s) not of the kind f. In the case of the paradigm substance concepts, it is never a merely conventional or conceptual matter as to the sorts of changes through which a thing can persist: with regard to artifacts it is often not a merely conceptual or conventional matter. Brody illustrates this point by considering two event types which can happen to a tree: its losing a branch and its being burnt down. That it persists through the former but not the latter is no matter of mere convention. Trees do not have the capacity to persist through their being burnt down. In Wiggins's terms, this is a deictic-nomological, as opposed to a merely conceptual, matter.[35]

The anti-realist is likely to object that it is indeed true that a tree does not continue to exist, *qua* tree, after being burnt down. The anti-realist may then add that this is a merely conceptual matter, entirely determined by our arbitrary individuative practice. We divide the world up into kinds but that is an affair in which only the operations of our conceptual framework are implicated, it is not about how the world is. The realist will reply that correct answers to questions of identity can be arrived at only through employment of the correct sortals: the selection of the appropriate sortal is dependent upon the nature of the thing. In fact, as will emerge, the realist may claim that an anti-realist conceptualist account of individuation and essence undermines the import and intelligibility of such questions.

Brody argues that given that there are some changes which a thing can endure and others which bring about its passing away, it follows that things have some of their properties essentially:

> an object o_1 has a property P_1 essentially just in case o_1 has P_1 and would go out of existence if it lost it (1973, 354; 1980, 81).

---

[34] The two sorts of change are distinguished by Aristotle, *On Generation and Corruption*, 319b7-32.

[35] Cf. Newman (1992, 165).

So, on Brody's account, any property the loss of which constitutes the passing away of a thing is an essential property. Kung (1977) protests that this formulation provides a necessary but non-sufficient condition for a property's being essential to a thing.[36] She argues that there are some properties such that their possessors would cease to exist were they to lose them, but which do not count as essential. To take one of her more plausible examples, she suggests (1977, 364) that if Jones ceases to be over eight years old then he ceases to exist, but being over eight years old is surely not essential to Jones.[37] This points to an advantage in Wiggins's characterisation of essence over that offered in Brody's original formulation, since the very existence of Jones is not conditional upon his being, or ever reaching, an age greater than eight. A trait is essential to a thing, then, not merely if the thing would cease to exist if it were lost: a necessary—but non-sufficient—condition upon a trait's being essential to an object is that the object could not have existed without the trait. A tree is distinct from the pile of ash which remains when it has been burnt down: the tree manifests a principle of activity (e.g. in its biological development) which a pile of ash cannot exhibit. That principle of activity is not merely such that the tree ceases to exist if it is lost; it is such that the tree would not have existed without it and it characterizes the organism throughout the course of its existence, including the stages prior to adulthood during some of which we would not call it a tree at all.

---

[36] Cf. S.M. Cohen (1978, 389). Brody (1980, 116-123) acknowledges the insufficiency of his original formulation. Marcus [1971](1993, 57) and Teller (1975, 236) fail to specify that the condition such a formulation lays down is non-sufficient. Kung indicates that Marcus commits the further error of equating essential properties with properties which are necessary to all of their bearers. As against Marcus, not all things which are triangular are necessarily triangular; since being necessarily ϕ is necessary to being essentially ϕ, being triangular is not essential to all things which happen to be triangular. (This is without prejudice to the question as to whether any triangular thing is so essentially. Also, it does not deny that *being a triangle* is necessary to all things which are triangles; triangles are not the only triangular things. There can be triangular helipads, but no helipad is a triangle. The distinction between the necessity and the essentiality of a trait —the former is necessary, but not sufficient for the latter— has a recent advocate in Fine (1994, 5).) Cohen (1978, 392) distinguishes between 'an *absolutely* essential attribute...that is essential to any individual that has it at all' and attributes which are essential to some, but not all of their bearers. The denial of Marcus's claim does not entail that *no* essential attributes are absolutely essential, it merely asserts that some are not. Penelope Mackie (1994, 313) defines 'essential sortal' such that 'A sortal concept *S* is an *essential sortal* if and only if the things that fall under *S* could not have existed without falling under *S*', adding that 'I ignore the possibility that there might be a sortal such that some, but not all, of the things that fall under it fall under it essentially...such a possibility would be an embarrassment to a sortal essentialist'. This suggests that the attributes of a thing must be distinguished from the essential sortals under which it falls. This in turn accords well with the notion of essence urged by Witt (1989) and with Wiggins's emphasis on the centrality of the distinction between 'predications in the category of substance and predications in the category of quality or relation' (1980, 67).

[37] Cf. Matthews (1990, 252-255).

Since the form of essentialism derived from Aristotelian considerations about change does not entail that there are names for all essential properties, Brody concludes (1973, 354-355) that it is committed to the existence of irreducible modality *de re*. In order to explicate all modality *de re* in terms of modality *de dicto* it is necessary that all entities with necessary traits have names in the language in which the purported explication is to take place.[38] Since the essentialism in question does not meet this condition it follows that metaphysically irreducible modality *de re* is admitted. This argument makes the unobjectionable assumption that our language may be semantically impoverished, or our knowledge may be restricted, such that there may be a thing in the world whose principle of persistence is unknown/unnamed, or that the thing itself may be unknown/unnamed. We might compare this observation with this remark of Wiggins (1980, 141) about the sortal concepts we employ:

> what sortal concepts we bring to bear upon experience determines what
> we can find there—just as the size and mesh of a net determine, not
> what fish are in the sea, but which ones we shall catch.

On an anti-realist view of individuation, a thing's distinctness is not due to how the world is. As against the relativism which can contribute to this view, Wiggins (1980, 60-61, 66-67) considers the case of Lot's wife.[39] How are we to deal with this story, where God changes a woman into a pillar of salt? According to Wiggins, the suggestion that the same thing starts off with the principle of persistence for one thing and that this principle of persistence then ceases to pertain, being replaced by the principle of persistence for another thing, is unviable because it is contradictory.[40] It is incompatible with such a change in persistence

---

[38] This consideration is raised as an objection to Plantinga's strategy of attempting to explicate *de re* modalities in *de dicto* terms by Cartwright (1968, 622). Cf. the criticism of Kripke offered by Wiggins (1974, 344-345). Plantinga (1969, 252-254) attempts to answer the objection, but even if the problem could be resolved the result would lead nowhere given the absence of exhaustive non-arbitrary equivalence relations between *de dicto* and *de re* forms.

[39] This is part of Wiggins's argumentative procedure against the '**R** theorist' (i.e. the relativist about identity) who 'typically exaggerates the autonomy of thought in the singling out of objects of reference' (1980, 101). 'The anti-realist conceptualist may or may not be an **R** theorist' (1980, 129). This conveys the point that, although anti-realist conceptualism is fostered by **R**-theory, **R**-theorists do not have a monopoly on the position.

[40] Lowe (1989, 103) agrees that it is conceptually impossible for Lot's wife to change into a pillar of salt but (as he has pointed out to me) on the *different* grounds that 'living organisms and parcels of matter have different criteria of identity'. On Lowe's account, criteria of identity differ from persistence principles as understood by Wiggins and myself in that the former but not the latter are known *a priori*. According to Lowe (*loc. cit.*), 'it would be wrong to [rule out] as being *conceptually*, as opposed to merely physically or naturally, impossible' cases in which 'the same living organism' changes 'from being an organism of one species, say a dog, to being one of another, say a cat'. This points to a

principles that it is actually the same thing that is under consideration: a human being cannot properly be said to fail to exhibit the persistence principle pertinent to human beings and yet to continue to exist. Wiggins sets out three other ways of describing the miraculous events in the biblical story:

(1)   the identity of Lot's wife and the pillar of salt may be denied;

(2)   a sortal predicate like 'woman pillar' may be invented to cover the identity and supplant the self-contradictory descriptions we began with;

(3)   the very coherence of the whole story may be challenged. (1980, 66)

The anti-essentialist will incline towards (2). In order for (2) to be applicable, the invention or selection of sortal concepts has to be detached from nature, becoming a matter solely of human convention or stipulation. The problem then is that all questions relating to the persistence of objects will be trivialized. Notions such as existence and persistence will themselves lose the import with which they are ordinarily regarded. The very supposition that the answer to the question 'what exists?' is determined solely by human invention undermines the seriousness of the question itself. The intelligibility of talk of existing and ceasing to exist may well require the rejection of (2).[41] The intelligibility of talk of a three dimensional continuant's ceasing to exist requires that ceasing to exist be construed as ceasing to be a substance of a determinate kind:

an individual *a*'s having ceased to exist at *t* is a matter of nothing identical with *a* belonging to the extension at *t* of the ultimate individuative kind (or to the extension at *t* of any sufficiently high individuative kind) that is *a*'s kind. (1980, 67)

The essential necessity of a trait arises at that point of unalterability where the *very existence of the bearer is unqualifiedly conditional* upon the trait in question. Here, at this point, a property is fixed to its bearer

---

much wider area of dispute which I cannot go into here, save to mention two relevant points. Firstly, my conception of metaphysical necessity, unlike Lowe's, counts natural necessity as a kind of metaphysical necessity. Secondly, after Wiggins, I distinguish (in Chapter 4) between conceiving *de re* and conceiving *de dicto*.

[41] Let the conventionalist give up our actual practice. Wiggins's **D**(ii) expresses the tenet that every three dimensional continuant that exists falls under a determinate sortal concept. Wiggins comments (1980, 62) that:

the denial of **D**(ii) or the sacrifice of the substance assumption would entail the denial of truth or significance or possibly both to indefinitely many of our existing beliefs...these beliefs are fundamental to our actual individuative practices. Whoever wants to give these up may do so. When he has done that (not merely said he will), we can take him as seriously as he takes himself.

> by virtue of being inherent in the individuation of it—inherent in the
> very possibility of drawing a spatio-temporal boundary around it. The
> closer the source of the attribute to the singling out of the thing itself—
> the more it is bound up with the whole mode of articulating reality to
> discover such an object in reality—the more exigent, obviously, is the
> necessity that, *if there is to exist any such thing as the bearer*, it should
> have the feature in question. The *de re* 'must' of causal inflexibility here
> passes over at a certain threshold into an inflexibility that is conceptual
> (though only loosely speaking logical). There is no reason why this
> should make the essentialistic *de re* attribute any less of a real attribute
> of the thing itself. (1980, 121)

To cease to exist is to cease to be a thing of a determinate kind. To be a thing of a
determinate kind is to exhibit the persistence principle characteristic of things of
that kind. It is substance concepts, rather than phased sortals which are relevant,
since it is the latter which relate to principles of persistence. It is not a matter of
mere invention or of nothing but conceptual considerations as to what counts as a
principle of persistence: rather, it is a deictic-nomological matter. Principles of
persistence relate to the *de re* modalities properly attributable to things in the
world. This can be illustrated by consideration of artifacts, let alone the objects
subsumed under the paradigmatic substance concepts. Hacking (1972, 147)
considers a 'bundle of contiguous qualities' composed from 'the bottom part of my
pen, the inside of my thumb, and a bit of yellow paper' and given the name 'berk'.
Berks cannot be substances. There are no persistence principles apposite to berks
because berks cannot do anything or have anything done to them:

> My pen and my berk differ. As a matter of fact, but not of logic, my
> pen, all by itself, can be thrown, heated, repaired, crushed, locked away,
> and wiped when wet. It can be posted, buried, and the like. It is hard to
> do many of these things to my berk, all by itself....Pens do all sorts of
> interesting things and have all sorts of interesting things done with
> them. Berks might be like that, but are not.

As far as the Aristotelian question 'what is *x*?' is concerned, things are what they
are in virtue of their principles of persistence. Principles of persistence are active
in the sense that they concern what a thing can do or have done to it without
ceasing to exist. Principles of persistence are thus modal: they relate to the
capacities/potentialities and abilities/powers of things. Since these, and the
principles of persistence which underlie them, are discovered *a posteriori*, our
individuative practice is not explicable in purely conceptualist terms. Our concepts
do not create the abilities of things nor, accordingly, their principles of persistence,
although they mediate our knowledge of those abilities and persistence principles.
Whether or not a putative sortal concept can be genuinely individuative will
depend upon whether there is a corresponding persistence principle. Questions of

identity and individuation can only be genuine, and can only be settled, where entities exhibit *de re* modal principles of persistence. Hacking (1972, 148) writes:

> Which bundles [of qualities] are substances? Only those bundles that are active, in the sense of having laws of their own. Laws provide the active principles of unity. There is a tendency in much analytic philosophy to conceive *things* as given, and then to speculate on what laws they enter into. On the contrary, things are in the first instance recognized by regularities.

The regularities in question are those which concern what things can do and can have done to them; and, what they must do if they are to exist. These are not determined by projections of ours or by conceptual considerations alone, but by how things in the world are. The actual is not non-modal, and should not be so characterized.

3.3 Anti-Realism II: Against Anti-Realist Conceptualism

The conceptualism to be contested is the full-blooded variety which contends that all modality has purely intensional or purely intentional status (i.e., anti-realist conceptualism, not conceptualism *tout court*). Furthermore, since conceptualist reductionism has already been criticized, the conceptualism which is of current concern is of a sort which designates at least some modal notions as irreducible (e.g. it may hold that essence is a reducible notion, but that possibility is not). The aim then, is to mount an attack upon anti-realist modal primitivism.

Wiggins (1980, 134-137) employs an objection against the anti-realist conceptualist. He directs his attack against a conventionalist reconstruction of essence and modality *de re*. The scope of Wiggins's objection may be extended to apply to some recent positions which foster anti-realism about essence and modality *de re*. Crucially, Wiggins's objection may help to discredit the view that modality is not ontologically grounded. The anti-realist would have it that our convictions concerning *de re* modalities are to be fully accounted for by conventionalist or projectivist explanations; that no such modality is ontologically grounded. The problem with the anti-realist's conviction is more likely to occur to the unabashed metaphysician, than to the neo-empiricist or the specialist philosopher of language. The problem identified by Wiggins is that the anti-realist's account has to rely upon the notion of entities as bare particulars.[42] According to van Fraassen (1978, 13-14),

---

[42] On the connection between anti-essentialism and commitment to an ontology of bare particulars, cf. Marcus [1971](1993, 64).

> At bottom, everything that can be said about the world, can be said in purely general statements, without modalities. There is no *thisness* beyond *suchness*, but every actual individual is individuated already by the properties it has in this world; hence can be denoted in principle by a definite description (in which the quantifier ranges over actual existents alone). At this bottom level the only necessity we can countenance is purely logical or verbal necessity which, like God, is no respecter of persons. In this modality, whatever Peter can do, Paul can do also.[43]

Wiggins objects that van Fraassen's account is no respecter of identity: it is unintelligible unless 'we can make sense of an entity that is nothing in particular' (1980, 135). The objection is, of course, that this notion of particulars as bare is not intelligible at all.[44] This lack of intelligibility is made all the more apparent in the light of the Aristotelian considerations mentioned above. It seems that *any* variety of anti-realist primitivism about *de re* modality would face the root problem identified by Wiggins, namely commitment to a bare particular ontology.

Anti-essentialism collapses into incoherence. The anti-realist conceptualist about essence has it that objects have properties but no essential properties. However, objects cannot have attributes but have none of their attributes essentially. This follows from the logic of modal notions *de re*. For any object, if the object has a property then it is able to have the property. (By the lights of 2.2, the foregoing is a necessary *a priori* truth.) Abilities, although non-spatial, are not occult entities. Rather, they require grounding in their possessors. For any ability, there is some vehicle in its possessor which grounds the ability. In order to acquire a property or to always have had it, the individual must have acquired, or always have had, the vehicle. That is not to say that the vehicle is of the essence of the individual. Nevertheless, the possession of the vehicle itself requires the ability to have or to acquire the vehicle. All the abilities of a thing cannot be merely accidentally had, since the absence of some fundamental capacities/abilities precludes a thing from having any abilities: abilities have to be grounded. (All of these claims follow from claims proposed at 2.2 as necessary *a priori* truths involving the *de re* modal notions.) So, objects cannot be such that they possess properties but lack essences. (This follows from the foregoing, and (j) of 2.2, i.e., the principle that that which accounts for a thing's possession of its fundamental capacities is of its essence.) Thus, this form of anti-essentialism makes all particulars bare in the thoroughgoing sense that they are precluded from having any properties at all. To reject essence is to reject an ontology of non-bare

---

[43] Quoted by Wiggins (1980, 134).

[44] Cf. Forbes (1985, 146), who comments that bare individuals 'are surely unintelligible'. Also, cf. the contentions of Lowe (1989, 3; cf. 4-5, 11-13, 38-39, 65): 'particular objects are only individuable and identifiable as particulars of this or that *sort* or *kind* (there are no "bare" particulars)...the notions of "individual" and "kind" are mutually dependent, with neither being in any sense more fundamental than the other'.

individuals (and vice versa). Since the postulation of objects with no properties is absurd this form of anti-essentialism reduces to absurdity.[45]

The postulation of bare particulars breaches the principle that only identifiable entities are genuine individuals.[46] Since we have no way of identifying bare particulars[47] they are not admissible into any sound ontology. Indeed, bare particulars are precluded from being identifiable since objects are identifiable, in even the most liberal sense, only in virtue of their having attributes[48] and, as we have seen, metaphysical modalities *de re* are involved in identity and individuation. Thus, being identifiable is incompatible with having no essential attributes. In addition, since such 'individuals' can neither be referred to nor described, they are ontologically inadmissible and epistemologically inaccessible.[49] McGinn (1981, 152) lays down an 'extra-linguistic' condition on individuality: 'something is a genuine individual only if it admits of proper identification short of exhaustive characterization'. Divers (1990, 71-76) applies this to Lewisian worlds in order to show that they fail to constitute genuine individuals: they admit of neither 'causally dependent indexical identification' nor 'descriptive identification' (1990, 72, 73). Likewise, it applies to bare individuals. Neither a monistic bare noumenal world nor a world populated by a plurality of bare particulars can contain causal relations, since the existence of causal relations requires the existence of properties. Having properties is also necessary for admitting of descriptive identification. These considerations bring home Wiggins's

---

[45] The necessary condition on individuality proposed, but not justified, by McGinn (1981, 152), that 'something is a genuine individual only if...its properties partition (non-trivially) into the essential and the accidental', is vindicated by the foregoing argument, at least so far as concrete entities are concerned. E.J. Lowe has pointed out to me that the argument just given is consistent with the thesis that any object whatever can have any property whatever and thus with the thesis that the ability to have any property is the only essential property— an essential property had by every object. The point is well-taken. Nevertheless, the point of my argument is to highlight the dubious coherence of anti-essentialism rather than to establish an essentialism more substantive than that just mentioned.

[46] The principle follows from the principle, implicit in Lowe (1994b, 533), that the possession of 'determinate and non-arbitrary identity-conditions' is a necessary condition on objecthood. By the lights of the theory of *de dicto* necessity I adopt, these principles are necessary *a priori* truths. They are true in virtue of the concepts *object* and *individual*.

[47] Cf. Wiggins (1974, 353).

[48] Cf. Wiggins (1980, 115).

[49] Cf. Lowe (1989, 12):

> the noun 'thing'...has no criterion of identity associated with it, is not a genuine sortal, and consequently cannot be used unambiguously to pick out some identifiable individual either as an object of knowledge or as an object of reference.

Cf. the cases of 'individual' and 'particular'.

charge (1974, 352) that if anyone merits being accused of having a ridiculous conception of substance it is the anti-essentialist.

One anti-realist development, the conventionalism proposed by Sidelle (1989), can reasonably be accused of falling prey to Wiggins's objection to anti-realist conceptualism. This is important since, unlike many other modal anti-realists, Sidelle has a conventionalist reconstruction of necessity *a posteriori* as his primary aim. Questions may be raised as to whether Sidelle's account can succeed, as he intends, in explaining necessity *a posteriori* via convention and analyticity. A very serious shortcoming of his account is that it construes essentialist claims as involving necessary *a posteriori* truths. In addition, the account rests on contestable arguments about the intelligibility of real necessity. For example, it is argued (1989, 117) that if the necessity involved in true essential attributions were real then it would rule out some states of affairs; it does not do this, so it is not real. In the light of the Aristotelian considerations on change considered above it should be clear that the soundness of this argument can easily be challenged.

A further point relating directly to the realism/conceptualism issue is as follows. Sidelle accuses the realist of regarding the world as existing already individuated. But, contrary to Sidelle's accusation, the realist can recognize that individuating is a human activity. This in turn need not entail that the world does not contain already discrete entities. The conventionalist's account is incoherent, though, because if individuation is, as the realist and the conventionalist can agree, an activity, then the activity has to have a basis resident in some object. Given that the individuating thing and the 'stuff' which is being individuated are not the same, and that the conventionalist account requires this non-identity, the conventionalist cannot insist that there are no already discrete entities prior to the individuating activity. This point is illustrated by Ayers's (1974, 134) comment that 'If there were no natural objects there would be no conventional objects either'. On the acceptance of Ayers's conditional, and the denial of its consequent, it follows, by *modus tollens*, that there are natural objects. The denial of the consequent of Ayers's conditional can be accepted by both the realist and the conventionalist. Sidelle's conventionalism goes so far as to assert that there are only conventional objects, or at least that there is only one non-conventional object, namely the (mind-independent) world as it is prior to the imposition of our individuative practices. On the acceptance of Ayers's conditional—given that the natural objects referred to therein are meant to include individuating beings—such a militant conventionalism reduces to absurdity.

Sidelle's account assumes that anti-conceptualist realism and anti-realist conceptualism are the only options in the philosophy of essence, individuation and modality *de re* (1989, e.g., ix, 2, 14-16, 87). So, Sidelle's account is framed in such a way that it leaves the most convincing form of realism (i.e., conceptualist realism) unconsidered and immune to the neo-empiricist attack upon 'real' (contrast 'nominal') essentialism which he seeks to mount. It follows, then, that by attacking such views he does nothing to discredit realism, but at best one form of realism (i.e., its implausible form: anti-conceptualist realism). In fact, most of

those who have recently sought to defend non-objectual modal realism have offered accounts consistent with what Wiggins calls 'sober conceptualism'.[50]

The accounts of van Fraassen and Sidelle both result in an untenable and epistemologically unrespectable bare particular ontology. Nevertheless, there is an important difference between their accounts. The nominalist position adhered to by van Fraassen rests upon the assumption of an ontology of bare particulars in that it is anti-realist conceptualist about non-logical necessity and essence but anti-conceptualist realist about individuation: 'every actual individual is individuated already by the properties it has in this world' (1978, 14), i.e., independent of modality and conceptual considerations. As Wiggins (1980, 136) notes, 'ideological' talk of necessity and essence is here taken to be posterior to pure ontology uncontaminated by such talk. The individuals posited by van Fraassen constitute an ontology of bare particulars because there are no properties which they must or must not have: this leads Wiggins (1980, 135) to characterize them as entities that are nothing in particular. (Anti-conceptualist realism about individuation need not be committed to an ontology of bare particulars so long as it is not anti-realist about essence and metaphysical necessity.)

Although Sidelle slides into anti-conceptualist realism about individuation when he asks whether 'modality is a real, mind-independent feature of the world, like wetness and dogs' (1989, 2), his anti-realism is *officially* directed towards necessity, essence *and* individuation. Although Sidelle's account does not rest on an ontology of bare particulars it does rest upon a bare particular ontology. This is because the world (as distinct from entities) is taken to be entirely independent of our individuative practice and our modal constructions. Sidelle, like Wiggins, emphasizes that individuating is a human activity. His anti-realist conceptualism, in contrast to Wiggins's realist conceptualism, entails that the world and this activity are independent of one another. Unlike van Fraassen, Sidelle does not posit a world of bare particulars: in Sidelle's view the entities that exist are determined entirely by our conceptual practice. But Sidelle does posit an unindividuated world independent of our conceptual scheme: he is not committed to a world of bare particulars, but he is committed to the world as a bare particular.

---

[50] The most rigorous account being that of Wiggins himself. McGinn (1981, esp. 157-158) adopts a conceptualist realism. I know of no comment of Kripke's which is inconsistent with sober conceptualism: contrast Sidelle's misattribution (1989, 15) of anti-conceptualist realism to Kripke on the basis of Kripke's supposition (1980, 124) that essences are discovered by natural scientists. (It should be clear from 2.2 above, and from my discussion of Wiggins's views, that there is no conflict between the tenet that essence is discovered empirically and a sober conceptualism. Indeed, I do not see how an ontology of essences for concrete objects could be epistemologically sustained by anti-conceptualist means.) Harré and Madden (1975) give a conceptualist realist account of causal modalities. An approach which appears to take the other route (i.e. anti-conceptualist realism) is that of Ayers (1974). Some of the criticism directed at conceptualism by Ayers could threaten only anti-realist conceptualism, e.g., (1974, 116): 'A serious objection to conceptualism...is that the life-histories of natural things have to be discovered, often gradually and with difficulty, and so cannot be supposed to be determined by an observer's conceptual scheme.'

According to Sidelle, 'we get essences...only from our methods of carving up the world' (1989, 19). Since our method of carving up that world is entirely a matter of convention it follows that the world is prior to the delineation of entities within it. The raw material upon which our conventions are brought to bear is the world. The world, then, as distinct from the aggregate of individuated entities dependent upon our conceptual scheme, is a bare particular on Sidelle's account. By way of illustration, consider his comment (1989, 55 n. 11) that

> the conventionalist should, and should be happy to, say that what is primitively ostended is 'stuff', stuff *looking* of course, just as the world looks, but devoid of modal properties, identity conditions, and all that imports. For a slogan one might say that stuff is preobjectual...there is nothing mysterious going on here—this is just the elaboration of the rejection of real necessity.

The objectual world, then, is foisted upon the preobjectual world. The preobjectual world just is stuff that is nothing in particular. Sidelle's position is quirky in that it posits a world entirely independent of our conceptual scheme but which, apparently, it is possible for us to know. Sidelle's claim that such a world *could* be ostended is implausible. Sidelle's comments are instructive in that they illustrate the price at which the rejection of real necessity comes on what is apparently the only other anti-realist path besides the adoption of an ontology of bare particular*s*. As a consequence of Sidelle's commitment to the idea that the world is a bare particular, he falls prey to an objection which is of the same broad form as that offered against van Fraassen by Wiggins. The thesis that the world is a bare particular is no more intelligible than the thesis that there is a world of bare particulars. The notion of a something which is nothing in particular is no more respectable in the case of the world than in the case of a set of particulars held to be in the world. From a metaphysical point of view, bare particular ontologies are profligate. Furthermore, any philosopher who is opposed to the idea that there are realms which it is entirely impossible for cognizing beings to know will deem such ontologies to be epistemologically unacceptable. Such ontologies violate the restrictions which Hume rightly sought to impose upon metaphysics, in that they postulate a realm entirely outwith the reach of our understanding. It is a virtue of the conceptualist realist approach that it has no such consequence. The choice between the acceptance of a conceptualist realist essentialism and a bare particular ontology is at the fundamental core of the debate between (the best form of) realism and anti-realism about essence. Essentialism must be favoured since the postulation of bare particulars is incoherent.

The realist about essence, modality and individuation can recognize that individuating is a human activity, without being committed to the view that the world does not already contain discrete entities. As Wiggins (1980, 139) writes, in depicting his own conceptualist realism,

> Conceptualism properly conceived must not entail that before we got for
> ourselves these concepts, their extensions could not exist autonomously,
> i.e. independently of whether or not the concepts were destined to be
> fashioned and their compliants to be discovered.

Once these facts about that to which the realist need not be committed are acknowledged, the dialectic of Sidelle's discussion is undercut.

The anti-realist conceptualist's account undermines our ordinary distinction between artifacts and natural beings whose existence is not due to human invention. We take ourselves to be ontologically prior to the artifacts we bring into being, but not ontologically prior to the natural entities we recognize. The best the anti-realist conceptualist could hope to achieve would be the maintenance of the claim that we are, or perceive ourselves to be, causally responsible for the existence of those entities ordinarily deemed to be artifacts in a way in which we are not, or do not perceive ourselves to be, causally responsible for the existence of those entities ordinarily deemed natural.[51] Nevertheless, from the point of view of fundamental ontology, the conventionalist account would obliterate all differences between the ordinary classes of artifacts and natural entities. Both classes of entities, are, on the conventionalist picture, ontologically dependent upon us. This might be taken to reduce the conventionalist position to absurdity given that there are well-established difficulties concerning the persistence principles of artifacts as against natural objects which carry over into problems about essentialist claims concerning the former but not the latter.[52] That the difficulties attach to artifacts and not to natural kinds suggests that, contrary to conventionalism, there is a fundamental ontological distinction between artifacts and natural kinds. Better, then, to adopt a conceptualism according to which,

> although horses, leaves, sun and stars are not inventions or artifacts,
> still, in order to single out these things, we have to deploy...a conceptual
> scheme which has itself been fashioned or formed in such a way as to
> make it *possible* to single them out. Wiggins (1980, 139)

This conceptualist premise richly illustrates the reciprocal relationship between reality and the sortal concepts we employ. Our concepts do not furnish themselves with extensions.[53] In order for a natural kind concept to be fulfilled it has to be possible for reality to meet that concept. That possibility is written into reality prior to the exercise of our individuative apparatus, and prior to the existence of

---

[51] Cf. Sidelle (1989, 51-52).

[52] On artifact identity, see Wiggins (1980, 90-99).

[53] Cf. Strawson (1966, 225). So, the anti-realist conceptualist claim of van Fraassen (1978, 19) that 'we do not have the task of representing the world the way it is, but only the way it is thought of' is quite outrageous.

concept-using beings.[54] Thus, when such a concept is met a modal fact about reality is revealed.

---

[54] In contrast, concept-using beings are ontologically prior to artifacts. (Cf. the conviction of Lowe (1989, 1) that natural entities 'must enjoy some sort of ontological priority over both abstract and artefactual objects'.) To avoid begging the question against theism, we might amend the claim in the text such that the possibility referred to is written into reality prior to the (metaphorically speaking) *earthly* existence of concept-using beings.

Chapter Four

Modality and Anti-Metaphysics

In this chapter I will examine the modality involved in the logical positivists' notion of verification in principle. I will argue that they conflated substantive modality and logical modality. If their notion of verifiability employs the former it is inconsistent with anti-metaphysics. If it employs the latter it will fail to grant cognitive meaningfulness to a class of statements which do possess cognitive meaning.

4.1 *De Re* and *De Dicto*

The argument for modal realism offered in the previous chapter employed a distinction—whilst seeking neither to pursue nor reject a divorce—between locutions *de re* and locutions *de dicto*. Contrary to the apparent fears of its empiricist critics, the grammatical distinction at issue by no means entails commitment to essentialism.[1] The view that the distinction is grammatical rather than metaphysical is defended at 3.3 above. I hold that the distinction can be recognized without non-trivial metaphysical commitment. However, unlike William Kneale (1962, 631), I do not take it that the distinction between modalities *de re* and *de dicto* is *at best* grammatical, just that the theorist who wishes to attach metaphysical weight to modality *de re* does not establish a case for such an attachment merely by pointing to the distinction between modal locutions *de re* and *de dicto*. The latter distinction can be admitted without inconsistency by the anti-realist about modality *de re*. It is a historical contingency, but no surprise, that anti-realists have tended not to do so.

Indeed, empiricists have tended to be staunch in their refusal to recognize this grammatical distinction. Two of the most prominent, Ayer and Quine, provide us with ample evidence of this tendency.

Ayer (1946, 149) claims that 'to say that a property *p* is a defining property of a thing A is equivalent to saying that the sentence which is formed out of the symbol "A" as subject and the symbol "*p*" as predicate expresses an analytic proposition'. He was later to declare boldly that 'there are only *de dicto* modalities' (1976, 24).[2]

---

[1] Contrast Ayer (1976, 24).

[2] Ayer (1979, 311) is somewhat ambiguous: 'No doubt there do [exist *de re* usages in English]'. Ayer says that he does not see, *contra* Wiggins, how this admission commits him to a belief in natural necessity. But this rests upon a confusion: Wiggins does not contend

Quine [1953](1966: 156-174, esp. 156-157) distinguishes between three ways in which modal expressions may function. On this account, modalities are taken to function only as semantical predicates (attachable to names of statements), statement operators (attachable to statements, not names of statements) and sentence operators (an expansion of the second grade, which allows the attachment of modal operators to open sentences—Tichy (1972, 90) and N.P. White (1986, 492 n. 3) erroneously take this to express distinctively *de re* modality). As Wiggins (1980, 107) notes, *de re* forms such as '*x* can be *ø*' and 'It is possible for *x* to be *ø*' (which pervade everyday language) fall entirely outwith the scope of the three grades of modal involvement identified by Quine.[3]

Consider the following comments made by Lamprecht:

> there is no point at which...empiricists are more adamant than in their resolute denial of natural necessity. Necessity holds between or among propositions, they say, not among things....If necessity be a term applied solely to the logical bond between premise and conclusion, then necessity is not found in nature, and even the adverb 'necessarily' would be a misfit for metaphysical use. But...there is in common parlance another sense of necessity in which necessity is constantly found in nature. The falling tree crushes the blades of grass. The grass can not resist the tree's impact. The tree *makes* the blades bend and lie prone. There is compulsion here. There is compulsion of that kind throughout nature....no member of the school of empiricists or any other, has the philosophical right to reject the facts indicated by a certain language because they do not themselves choose to use that language. And that is what the empiricists have done. They have denied the facts of coerciveness in nature's operations (that is, what might be called physical necessity) on the ground that natural connections are not like implications among propositions (that is, what might be called logical necessity). [1961](1967, 109-110)

This passage is rich with matter for the illustration of crucial elements in our discussion. Lamprecht rightly observes that empiricists have been (historically, not logically) led, through the rejection of real necessity, to a rejection of the very

---

that the grammatical point establishes the metaphysical point, contrary to Ayer's apparent assumption. In addition, Ayer's comments are inconsistent with Ayer (1976, 24), where Ayer implies that the recognition of *de re* modal idioms commits one to essentialism. W. Kneale (1962, 624) indicates, after a remark of Abelard, that the doctrine 'that every modal statement was about the sense of another statement' was adhered to by some medieval logicians, not including Abelard himself, who apparently deemed only *de re* constructions to be authentically modal. The view attributed to Abelard by Kneale compares with that of A.R. White (1975, 171), notwithstanding White's accession to the view that 'the modals...are "referentially opaque"' (1975, 176).

[3] Similarly, Quine (1980, 4, 143-145, and esp. 151) does not allow for the grammatical distinction at issue.

idiom in which we express that necessity. However, Lamprecht is at fault in a manner akin to those who expound the very view which is the subject of his critique, since he takes it that the everyday uses of the notion of natural necessity in the locutions we employ in attempting to depict the world around us establish that there are natural necessity-involving facts. If it is the intelligibility of the concepts and linguistic forms we employ which is of immediate concern, then the discussion ought to be realigned, such that the facts at issue concern usage, rather than the extra-mental realm. What is then shown is that, in expressing our beliefs about the world, we actually employ locutions which do make use of a notion of non-logical, yet objective, necessity. Some empiricists have denied this because they have erroneously taken it that the acknowledgment of this linguistic and conceptual point entails committal to a metaphysical standpoint they reject. Contrary to their view, a recognition that modal attribution *de re* features in our practice does not in itself involve us in the acceptance of such a metaphysic. The cynic might observe, though, that by the denial of the very intelligibility of modal attribution *de re* and of the very employment of *the notion* of objective non-logical necessity, the empiricist practises an unseemly form of philosophical economy since such a denial precludes the empiricist from having to account for our *de re* modalizing practice (via the very refusal to accept what are facts about our practice). Thus, the empiricist is saved from a formidable and bothersome task. I hope to establish that despite the adamant rejections, by prominent empiricists, of the very notion of necessity *de re* and modal attribution *de re*, the logical positivists were themselves reliant on both. Lamprecht is right to indicate that many traditional empiricists profess to reject the notion and the idiom in question, but they, no more than contemporary empiricists of similar opinion, do not really refrain from employing that idiom. Such empiricists may not explicitly employ talk of necessity in nature, but they certainly help themselves to modal attributions *de re*. (So, their denial of facts which characterize our practice is undercut by their own participation in that practice. Consequently, they cannot shirk from the formidable and bothersome task already mentioned: they are bound to account for the notion of objective non-logical necessity and modal locutions *de re*. Since they reject essentialism they will have to do so along anti-realist lines. Thus empiricism is seen to be incompatible with the advocacy of the elimination of metaphysics.) Furthermore, some of their proposals concerning verifiability appear to require that there is necessity in nature: this takes us beyond merely linguistic and conceptual points and into realist metaphysics. Before proceeding to examine modal issues regarding the notion of verifiability in principle, it will be useful to restate and bolster the *de re*/*de dicto* distinction.

Opponents of modality *de re*, often motivated by the mistaken suspicion that recognition of *de re* modal locutions entails the acceptance of real essence, have either attempted to reduce locutions *de re* to locutions *de dicto* or maintained that at best *de re* locutions will so reduce if they are to make any sense at all. Conversely, and ironically, some of those sympathetic to essentialism have sought to allay the fears of those who abhor modality *de re* by attempting to explicate it,

and accordingly the notion of essence, in terms of modality *de dicto*.[4] I have maintained that whether or not *de dicto* modality is reducible to modality *de re*— an issue concerning which I have sought to preserve neutrality—modality *de re* is definitely not reducible to modality *de dicto*. Also, in contrast to the approach just mentioned, I hold that modality *de re* is not just irreducible to modality *de dicto*, but is not even explicable in terms of modality *de dicto*. (I have associated metaphysical modality with modal locutions *de re* and, perhaps implicitly, logical modality with modal locutions *de dicto*.[5] Later, this latter association will be discussed in more detail.)

I endorse Hacking's view that the *de re/de dicto* distinction may be explicated in terms of the contrast between the following forms of locution:

> (I). It is possible that *p*, and
> (II). It is possible for *A* to *x*.

These two sorts of modal locution exhibit important differences.[6] Examining these ordinary syntactic differences has considerable heuristic value in helping to explain the logical differences between modalities *de re* and modalities *de dicto*.

---

[4] The most prominent being Plantinga (1969; 1970; 1974, Chapter 3). Contrary to the charge levelled against him, on the basis of readings of the earlier works, by Marcus [1971](1993, 66), Tichy (1972, 88) and Burge (1977, 344), Plantinga eschews reduction of modality *de re* to modality *de dicto*, taking both to be primitive. Plantinga states (1969, 248) that he seeks to explain modality *de re* via modality *de dicto*. Explanation of *x* in terms of *y* does not amount to a reduction of *x* to *y*, as Plantinga recognizes. Plantinga (1969, 257) expresses manifest hostility to the reductionist project, maintaining that *de re* and *de dicto* modalities are reciprocally explicable and that this will serve to allay the worries of those who are comfortable with modality *de dicto* but uncomfortable with modality *de re*. Although Plantinga's aspiration is to provide definitional equivalences between modal discourses *de re* and *de dicto*, he recognizes that definitional equivalence is a necessary but non-sufficient condition for reduction: this is implicit in (1974, 42). (Reduction requires asymmetry: cf. Mumford (1994, 422). The *conceptual priority* of modality *de dicto* over modality *de re* is required for a reduction of the latter to the former.) Fumerton (1986, 294 n. 8) perpetuates the reductionist misinterpretation.

[5] I do not suggest that all modal locutions *de re* relate specifically to metaphysical modality or that all modal locutions *de dicto* relate specifically to logical modality. (The statement that it is necessary for me to serve a prison sentence does not concern metaphysical necessity. Similarly, if someone says 'it is possible that I will win the lottery' we can reasonably take it that the speaker is concerned with a possibility other than merely logical possibility.) In addition, my discussion avoids 'the assumption of surface synonymy between "is essentially" and *de re* occurrences of "is necessarily"' described, and rejected, by Marcus [1971](1993, 59-60). I do hold, however, that *de re* modal truths reflect the natures of entities, as my discussion of the epistemology of substantive modality *de re* at 2.2 above has hopefully made clear.

[6] These differences are documented by Hacking (1975), whose account I follow but not without qualification, as will become clear. The distinction between the two forms of locution is also drawn by Ayers (1968, 13ff). The differences apply, *mutatis mutandis*, to necessity-involving constructions.

(I) displays a manifest dictum, *p*, whereas (II) does not: typically, the place of *A* is filled by an individual, *x* by an activity.

Hacking (1975, 323) claims that (II) does not entail (I). G.E. Moore (1962, 188, cf. 185) noted that examples like 'It is possible that I will go, but I won't' involve 'a sort of' contradiction, whereas those such as 'It is possible for me to go, but I won't' do not. In the case of possibility-involving constructions, a lack of entailment from (II) to (I) would appear to rest upon 'possible' being interpreted in an epistemic sense in (I) but in an objective sense in (II).[7] So far as concerns objective possibility, the lack of entailment is from (I) to (II). From the premise that it is logically possible that I should levitate it does not follow that it is possible for me to levitate.

The differences between modal constructions of the forms (I) and (II) can also be highlighted by appeal to the notion of contingency and, more generally, by appeal to principles of modal logic. Now contingency, unlike necessity and possibility, is an exclusively alethic notion: contingency is always contingency *that*. Furthermore, contingency, unlike necessity and possibility, is an exclusively logical notion. This is illustrated by the fact that it makes no sense to talk of something's being logically contingent but not actually contingent, whereas it can make perfect sense to talk of something being logically but not actually possible. By definition, a proposition is contingent if it does not entail a contradiction and it is not logically necessary. By the lights of the modal logical system S5, a modal construction of the form (I) will entail its own necessity: both $\Diamond p \approx \Box \Diamond p$ and $☎p \approx \Diamond ☎p$ are theorems of S5.[8] Since a (I)-style statement of possibility entails its own necessity, the modification of such a statement with a contingency operator will entail a contradiction. I have already noted, at 2.2, that standard modal logical systems such as S5 do not include the resources for representing constructions of the form (II) since such systems include only sentential modal operators. My claim is further substantiated by the observation that a (II)-style statement of modality need not entail its own necessity. In the case of possibility, *it is possible for Tom to swim* does not entail *it is necessary that it is possible for Tom to swim*. (This also applies to statements of ability more naturally phrased, such as *Tom can swim*.) There is no contradiction involved in the supposition that Tom might never have been able to swim. Thus, no contradiction is entailed by stating that it is contingent that it is possible for Tom to swim.

The distinction between the forms (I) and (II) is even more pronounced in the case of necessity than in the case of possibility (and it has already been alluded to at 2.2). So far as concerns objective necessity, there is no entailment in either direction. Concerning the claim that (II) does not entail (I), I do not mean to reject the tenet of classical logic that a necessary truth is entailed by any proposition whatever. Rather, my point is that the attempt to translate a 'necessary *for*' construction into a corresponding 'necessary *that*' construction will not always

---

[7] I am grateful to E.J. Lowe for this suggestion.

[8] See Hughes and Cresswell (1996, 58-59).

preserve truth. Indeed, the classical logical principle can be invoked as a means of supporting my case. Cicero might never have existed. Thus, *Cicero is identical to Tully* is no necessary truth. *It is contingent that it is necessary that Cicero is identical to Tully* entails a contradiction. This ailment does not afflict *it is contingent that it is necessary for Cicero and Tully to be identical.*

In the case of necessity, the lack of entailment from (I) to (II) is illustrated by the fact that, on the usual assumptions (with respect to the truth-conditional nature of modal discourse and the truth-values of modal judgments), truth-value does not survive attempted substitutions across the two types. Burge (1977, 339-340) gives as examples 'The proposition that every man who steps on the moon steps on the moon, is necessary' and 'Every man who steps on the moon is such that he necessarily steps on the moon'. Rendering these constructions into the forms identified by Hacking, it is evident that the proposition that *it is necessary that every man who steps on the moon steps on the moon* is true, whereas the proposition that *it is necessary for every man who steps on the moon to step on the moon* is false.[9]

Hacking (1967, 151-153; 1975, 323-325) notes that the two forms admit of different adjectives. A key difference is that (I), but not (II), admits the substitution of the modal term by 'probable', whereas (II), but not (I), admits the substitution of the modal term by 'permissible'. Hacking explicates the *de re/de dicto* distinction in terms of the distinction between (I) and (II), subject to the caveat that where 'central *de re*' modality is concerned, 'the *A* denotes an individual thing or agent', whereas type (II) locutions which involve reference to kinds are *de re* 'only in an extended or Pickwickian sense' (1975, 326-327). However, by the lights of a *de re/de dicto* distinction worthy of purely grammatical status this semantical consideration is irrelevant. I contend that the *de re/de dicto* distinction is well-explicated in terms of the evident differences between (I) and (II). Thereafter, I propose, in accordance with Hacking's remark, that the centrally/non-centrally *de re* distinction is semantical/metaphysical. Hacking's caveat notwithstanding, I see no problem in viewing species as *res*, even if this extends the 'classical' sense of the term.[10]

---

[9] On this lack of equivalence, cf. Bradley and Swartz (1979, 238).

[10] Hacking (1975, 326) counsels that *de re* constructions may form only a subclass of the constructions exhibiting (II) on the grounds that 'in *It is possible for the sperm whale to survive at least two more years before extinction...the sperm whale* designates not an individual but a species, and classically this is no *res*'. Given that the *de re/de dicto* distinction is exhaustive of the forms of modal constructions, species have to be counted as *res*, since they are not *dicta*. In addition, central modality *de re* may be viewed as concerning concrete objects, not just concrete individuals. (This allows propositions to feature in non-centrally *de re* constructions.) Since species are concrete entities reference to species can occur in centrally *de re* constructions. On the concreteness of species cf. Lowe (1994b, 531). There is reason then, to avoid any restriction dictating that central *de re* constructions are confined to those which feature names for Hacking's 'classical' *res*. We might also note that it should not be laid down as a necessary condition for a construction's being *de re* that it contains a genuine designator. Whether or not 'God' is a non-empty

Logical modalities, which I take to be typically *de dicto*, may admit of *de re* expression.[11] Indeed, this is suggested by Hacking (1967, 156):

> *Conjecture I*: Every use of the word 'possible' in an utterance has associated with it at least one noun phrase and a verb phrase (perhaps unuttered) that can serve as the subject and predicate of a corresponding 'possible for' construction.[12]

'It is logically possible that *p*' may be re-expressed, for example, as 'It is possible for the proposition that *p* to *x*', where *x*-ing is a function the performance of which is a distinguishing characteristic of logically possible propositions. Hacking (1967, 157) writes that 'one could say the verb *V directly* parallels the noun *N* if and only if something is an *N* if and only if it *V*. The verb *indirectly* parallels the noun if something is an *N* if and only if we, or someone else, or something else *V*.' This suggests that there may be an alternative *de re* formulation pertinent to logically possible propositions, involving the latter sort of occurrence and perhaps relating to our reasoning faculties. Note that in such *de re* formulations (if that they be) of logical possibility claims, reference to manifest *dicta* is still evident.

Even if *de dicto* modalities were semantically or metaphysically reducible to *de re* modalities that would in no way undermine the *de re*/*de dicto* distinction. In such a circumstance, *de dicto* would be a subclass of *de re*, rather than being identifiable with it: *de re* modality *per se* would remain irreducible. In characterizing a modal locution as *de dicto*, then, I mean that it admits of unproblematic expression in terms of (I). If we accept that logical modalities can be expressed in *de re* form we have to be careful as to how this claim is understood. 'It is logically possible that if you put the paper in the fire it will not

---

name, 'It is possible for God to intervene in nature' is a *de re* construction, by the lights of the syntactic *de re*/*de dicto* distinction I adopt. Whether or not a construction is centrally *de re*, i.e., whether it succeeds in saying anything about a genuine *res*, is a semantic/metaphysical issue separate from the distinction adopted at the basis of my enquiry.

[11] I register my disagreement with the view of Gomberg (1978, e.g., 398) that 'it is possible that *p*' and 'it is not certain that -*p*' are equivalent. Gomberg's discussion seems to me to be unduly stipulative, if not question-begging, on this point. In so far as he argues for his view it is on the basis of 'sentence deviance' (1978, 402). I see nothing deviant in constructions of the form (I) which employ 'logically possible'. Readers are free to exercise their own discretion in this matter but I take it that Gomberg's suggestion is exceedingly implausible given that philosophers are apt to employ such constructions and that these are the natural, or at least commonly supplied, non-formal counterparts for formal constructions in which sentential modal operators feature. That philosophers grant them employ is no proof of their lack of deviance, but Gomberg provides no technical argument to establish such deviance. The point stands that if the constructions were *intuitively* or *naturally* regarded as deviant it would be most unlikely that they would feature as prominently as they do in philosophical discussions.

[12] Cf. Ryle's talk of the 'logical powers' possessed by propositions (1959, 331).

burn' may be expressible in the following *de re* form: (i) 'It is possible for the proposition that *if you put the paper in the fire it will not burn* to *x*'. It is not re-expressible as (ii) 'It is possible for the paper to fail to burn when put in the fire'. Even if logical modalities can be expressed via *de re* constructions, as it seems they can, it is still *dicta* which are modally qualified, in contrast with cases such as (ii) in which modal expressions qualify simple or complex predicates.[13]

4.2 Empiricism, Verifiability, Modality

Verification in Principle

> To advance the dictum that what is empirically known, and what is meant, must be verifiable, and omit all examination of the wide range of significance that could attach to 'possible verification', would be to leave the whole conception rather obscure. C.I. Lewis (1934, 137)[14]

I now turn to an examination of the modality involved in the notion of verifiability. It will become apparent that there is considerable obscurity in the logical positivists' conceptions of this notion, which is far from expurgated subsequent to examination. I contend, however, that, for the most part, their stated intention was that the relevant modal notion was logical possibility.

The logical positivists incorporated a modal element into the verification principle in order to avoid the undesirable consequences which would result from an excessively restrictive criterion specifying meaningfulness solely in terms of actual verification. Thereafter, Schlick introduced further modality by proposing a distinction between (what became known as) practical verifiability and verifiability understood more widely.[15] Thus, the class of non-analytic meaningful statements was to include statements such as the statement 'that there are mountains on the farther side of the moon'.[16]

Ayer introduced the notion of verifiability as providing a necessary and sufficient condition for non-analytic meaningfulness:

> We say that a sentence is factually significant to any given person, if, and only if, he knows how to verify the proposition which it purports to express—that is, if he knows what observations would lead him, under certain conditions, to accept the proposition as being true, or reject it as being false. (1946, 35)

---

[13] Cf. Wiggins (1980, 106).

[14] Cf. Misak (1995, 2, 206 n. 4) on Berkeley's notion of conceivability.

[15] Schlick [1932b](1959, esp. 88-89); Ayer (1946, 36).

[16] Ayer (1946, 36), after Schlick.

He proceeded to specify that the relevant notion of verifiability was that of verifiability in principle, rather than practical verifiability. That which is practically verifiable is that which we have the means to verify: we could verify it 'if we took enough trouble' (1946, 36). So, a statement is practically verifiable if we have the technical methods and equipment at our disposal via the exercise of which its truth or falsity could be indicated, regardless of whether the relevant process has been or will be pursued. Practical verifiability raises the same question as verifiability in principle regarding the nature of the relevant modality. I will concentrate upon the latter notion.

There are some grounds for doubt about the nature of the notion of verifiability in principle and, as we will soon see, unanimity on this matter was not exhibited among logical positivists. My contention will be that the modalities most widely reputed to have been involved in the notion of verifiability in principle are logical, and it is fair to say both that this was the most prevalent view among the logical positivists themselves and that it is the view which best accords with their philosophical programme. Before discussing this matter further, some comments regarding the role of the notion of verifiability in principle in the account of meaningfulness furnished by the logical positivists are in order.

Satisfaction of the formulation of verifiability in principle as set out by Ayer (1946, 35) came to be regarded as neither necessary nor sufficient for the meaningfulness of a statement since there was a desire to grant empirical significance to (particularly scientific) statements which could neither be justifiably asserted nor justifiably denied directly on the basis of empirical observation.[17] The notion of verifiability in principle was not forsaken, it was qualified such that a statement was held to be empirically significant if it was either directly or indirectly verifiable.[18] Indirectly verifiable statements were held to be 'relevant', or logically related, to statements directly verifiable in principle. Ayer noted that his talk of 'relevance' was imprecise, and attempted to provide greater clarity by specifying that:

> a statement is directly verifiable if it is either itself an observation-statement, or is such that in conjunction with one or more observation-statements it entails at least one observation-statement which is not deducible from these other premises alone; and...a statement is indirectly verifiable if it satisfies the following conditions: first, that in conjunction with certain other premises it entails one or more directly verifiable statements which are not deducible from these other premises alone; and, secondly, that these other premises do not include any statement that is not either analytic, or directly verifiable, or capable of being independently established as indirectly verifiable....I can now reformulate the principle of verification as requiring of a literally

---

[17] As Ayer (1946, 13) and Hempel [1950](1959, 118-122) noted.

[18] Ayer (1946, 11-13, esp. 13).

> meaningful statement, which is not analytic, that it should be either
> directly or indirectly verifiable, in the foregoing sense. (1946, 13)

Ayer was here attempting to avoid the logical problems, and the problems regarding excessive and deficient restrictiveness, arising from the introduction of the notion of indirect verifiability and mentioned at 1.1. Regardless of those problems, an examination of the modality involved in the notion of verification in principle goes to the roots of the logical positivist approach to empirical meaningfulness. Ayer used the term '"observation-statement"...to designate a statement "which records an actual or possible observation"' (1946, 11). Hempel [1950](1959, 110) intended the concept of an observation sentence 'to provide a precise interpretation' of the vague notion of verifiability in principle. However, the concept of an observation sentence leaves unresolved the issue of the type of possibility which is pertinent to verifiability in principle.[19] This is a murky area in the logical positivists' writings: vital questions such as the aforementioned were infrequently raised. In addition, what critical literature there is examining modal aspects of the logical positivists' philosophy tends to focus mostly on issues relating to their attempted reduction of dispositional attributions to conditional statements.[20]

I have already alluded to the absence of unanimity among the logical positivists concerning the sort of modality which was intended to be involved in the notion of possible verification. Their programme disqualifies the metaphysical modality with which we have been concerned from pertinence. If such modality were to be detected in their philosophy it would have to be regarded as inadvertently present, since an acceptance of such modality is entirely at odds with their positivist project of eliminating metaphysics: we will see, however, that verificationism by no means entails positivism and that, in fact, there is reason to doubt the consistency of their combination. Since the logical positivists recognized only logical modalities we will be strongly inclined to say that their intended modality was thus logical. However, matters are rather more intricate. Firstly, it is somewhat ambiguous as to what is implied by saying that one recognizes only logical modalities. One might be saying that the only modal notions one will countenance—the only modalities one will regard as intelligible—are the logical

---

[19] Hempel [1950](1959, 110 nt. 5, 111 nt. 6) thought it to be logical possibility, but the issue is not as straightforward as he appears to have believed. Despite his assertion [1950](1959, 111 nt. 6) that '[as] has frequently been emphasized in empiricist literature, the term "verifiability" is to indicate, of course, the conceivability, or better, the logical possibility of evidence' the logical positivists were not unanimous on this issue. Notably, as we shall see, Carnap construed verifiability in terms of physical possibility.

[20] E.g.: Hempel [1950](1959); E.C. Moore (1951); Poser (1988), his excessively wide application of the term 'logical positivism' (to the early views of Russell and Wittgenstein) notwithstanding.

modalities.[21] On the other hand, one might be subscribing to the reductionist thesis that other modal notions, such as causal and physical necessity, are nothing but localized or qualified versions of the logical modalities which one regards as fundamental.

That the former attitude was adhered to by Ayer is evidenced by the following comments made to Ted Honderich:

> I regard necessity as a purely logical notion. I won't have metaphysical necessity, which people now are going in for, and which seems to be horrible. Or indeed causal necessity, which I'm afraid to say you are rather tempted by. I think I give myself an Alpha for trying to stamp out that absurd heresy. Honderich (1991, 224)

These comments express an attitude adhered to by Ayer throughout his career. Ayer states that the only *modal notions* he will countenance are those of logical necessity and possibility. Ayer appears to regard it as a violation of his empiricist commitments to use any modality other than logical modality. His comments preclude him from attempting to explicate non-logical modal notions such as causal and metaphysical necessity in terms of logical modality (or from reducing the former to the latter): in word, but not deed, he rejects all talk involving non-logical modalities.[22]

---

[21] Obviously any such comment coming from a logical positivist could not mean 'the only necessity I regard as *real* is logical necessity'. The recognition of this point leads to an apparent problem for the anti-metaphysical credentials of logical positivism. The logical positivist is committed to denying the meaningfulness of metaphysical claims and is thus precluded, as was well-recognized, from either asserting or denying any metaphysical claim. However, it seems quite clear that where logical modalities—crucial to the entire workings of their philosophical framework—were concerned the logical positivists adhered to an anti-realist position, whereby logical modalities were regarded as reducing to linguistic convention. Unlike Wittgenstein, the logical positivists were committed to (a kind of) semantic realism about logical modalities: statements of logical modality were held to reduce to linguistic convention. Their stance on the logical modalities was semantically realist and ontologically anti-realist. Wittgenstein viewed logical discourse as (semantically, not syntactically) non-assertoric throughout his career: for him, it had similar status to metaphysical discourse (especially to the 'propositions' of the *Tractatus*). Unlike Wittgenstein, the logical positivists failed to realize that their own philosophy was metaphysical. The claim of Butchvarov (1970, 7) and Dummett (1992, 145), that it is an illusion to think that metaphysics can be abolished from philosophy, is borne out.

[22] Despite his professed attitude he continued to help himself to such talk, as is evidenced by the profusion of modal locutions *de re* in this passage (1991, 10):

> for there really to be a door there, or indeed any other physical object...that I could mention, it is not enough that it be visible to me. It has to be accessible to my sense of touch and it has to be accessible to other observers. It has to occupy a position in three-dimensional space and to endure throughout a period of time. Moreover, if it is correctly identified as a door it has, at least potentially, to fulfil a certain function:

In contrast, Carnap has no compunction about talk of physical possibility: in fact he describes the modality involved in verifiability in principle as physical possibility (1936, 423).[23] Carnap disputes a view earlier proposed by Schlick that verifiability in principle relates to logical possibility.[24] At best, the empiricist can recognize a notion of physical possibility such that physical possibility is nothing but logical consistency with a certain class of statements treated as physical laws holding in the actual world.[25] If physical modalities are recognized they will be interpreted as logical consequences of probabilistically construed natural laws, rather than as relating to necessity proper (i.e. that which does not admit of deviation).[26] Carnap's physical possibility-style verificationism would appear to

---

       it needs to be solid; there is a limit to the sort of material of which it can
       be made. And similar considerations would apply to any other physical
       object that I had chosen for an example.

[23] Carnap's contentions in this regard are overlooked by Hempel. Carnap (1937b, 37) also employs the notion of physical possibility.

[24] The view appears in Schlick's 'Positivism and Realism', [1932b](1959: 82-107, 88-89). However, Carnap's reference (1936, 423) is to 'Meaning and Verification', [1936](1979: 456-481, 464), where Schlick repeats the claim: 'It must be emphasized that when we speak of verifiability we mean *logical* possibility of verification, and nothing but this.' Like Carnap, Schlick has no compunction about using talk of non-logical modalities. Schlick [1932b](1959, 89) draws a sharp contrast between logical modalities and empirical modalities, relating the latter to the laws of nature.

[25] The acceptability of such a notion of physical possibility is dubious since physical possibility, granting that it concerns concrete entities, is best regarded as a species of *de re* modality. Accordingly, in the light of the *de re*/*de dicto* distinction I have employed, it does not admit of explication in terms of logical modalities at all. Putnam (1990, 68) is among the many who depict laws of nature as 'physically necessary truths', while Bacon (1981, 134) claims that 'physical necessity follows from logical necessity', such that for any statement *p*, if *p* is logically necessary, then *p* is physically necessary. This seems to be a mistake, like the empiricist interpretation of physical possibility as a qualification on logical possibility. On such a *de dicto* interpretation, the proposition that *2+2=4* is physically necessary, since it is logically necessary. Bacon's view, like that of empiricists who employ a notion of physical possibility as qualified logical possibility, treats physical modalities as operators on statements. Where an adverb relating to a discipline modifies a modal term this is usually taken to indicate that the modal notion at issue is concerned with that which is studied by the discipline: cf. Hacking (1975, 325). Neither numbers nor propositions are part of the study of physics. The depiction of physical modalities as *de dicto* is, of course, a standard feature of empiricist accounts. One such example is Russell (1940, 170): '"The moon is made of green cheese" is syntactically possible, but not physically.' Although there is room for doubt, this comment suggests that Russell takes physical impossibility to pertain to linguistic items. He seems to be denying that the statement in question is physically possible, rather than suggesting that statements are not the kinds of things which admit of physical possibility and impossibility.

[26] Cf. Fisk (1973, 27): 'necessities restrict alternatives...a restriction...either closes down alternatives or it does not'. The positivist's notion of physical necessity is not genuinely restrictive since physical laws themselves are not taken to express something which

be at odds with the strict analytic/synthetic and conceptual/empirical dichotomies (to which Quine has directed much critical attention) in the central nervous system of logical positivism, wherein the realm of necessity is confined to the former half of each dichotomy.

An example used by Schlick in his discussion of the modality involved in verifiability in principle is the statement 'Rivers flow uphill', subsequently called 'S_1' by Carnap.[27] Schlick's claim is that the statement is verifiable because it is logically possible. Carnap claims that confirmability relates to physical possibility. Carnap makes the obvious point that this claim does not constitute a denial of the claim that S_1 is logically possible. More importantly, Carnap's claim is not that the statement itself describes a physical possibility, but that the statement is confirmable 'because of the physical possibility of the process of confirmation; it is possible to test and to confirm S_1 (or its negation) by observations of rivers with the help of survey instruments'. Carnap's account also appears not to resolve the issue of the modality involved in verification in principle. On a sensible reading, where Carnap refers to the physical possibility of processes of verification with the help of whatever equipment is relevant, he cannot be taken to be reverting to the point where practical verifiability alone is taken to prescribe meaningfulness. Where he says, in the passage just quoted, that 'it is possible to test and to confirm S_1' citing this as the reason why S_1 is deemed literally significant, I take it that he does not mean that S_1 is meaningful because we presently have at our disposal the means to carry out the relevant process of confirmation. If we take it that Carnap does not mean 'practical verifiability' by 'physical possibility of confirmation' then he may be taken to mean 'confirmability in principle'.[28] If, for Carnap, physical laws are to determine meaningfulness then his account faces further difficulties. Firstly, the determination of meaningfulness is no longer an *a priori* matter, which sits very uncomfortably with the programme of logical positivism. Secondly, the laws of physics are themselves subject to processes of empirical confirmation, as Carnap states, in respect of a scientific law, 'instead of verification, we may speak here of gradually increasing *confirmation* of the law' (1936, 425). He notes that this is no different in the case of particular sentences. How can meaningfulness be, as Carnap suggests, determined by considerations relating to physical modalities when statements relating to those physical modalities require processes of confirmation meeting the same modal restrictions on meaningfulness as any other class of statements? (If physical modalities are adhered to here then the road to holistic anti-positivism appears to rise quickly.) The laws of physics cannot serve as modal conditions on meaningfulness if the determination of the meaningfulness of statements relating to those laws themselves requires that they are meaningful and that they hold. Carnap's view

---

genuinely closes down alternatives: as far as the empiricist is concerned, natural events are not precluded from breaching the laws of nature.

[27] Schlick [1936](1979, 467); Carnap (1936, 423).

[28] On the basis of (1937b, 37), it is clear that Carnap recognizes distinctions between practical, physical and logical possibility of confirmation.

would appear to lead to the conclusion that a statement about the meaningfulness of a given statement itself constitutes an empirical hypothesis.[29]

Moreover, Carnap's claim that 'it is possible to test and confirm S_1 (or its negation) by observations of rivers with the help of survey instruments' may be reformulated as, 'It is physically possible for us to verify S_1'. The reformulation is perfectly in accordance with Carnap's statement, and both are paradigmatically *de re*. We see, then, that substantive, rather than merely logical, modality is at play: the claim and its reformulation express beliefs about what is possible *de re*. Notions of the physical modalities which view them as qualified logical modalities are unacceptable since physical modality is *de re*, not *de dicto*. The very framing of verifiability in principle in terms of physical modalities employs modal locutions which are paradigmatically *de re* (and thus irreducible to modal locutions *de dicto*), as the quotation from Carnap illustrates.

Among the major characters in the logical positivist movement Carnap appears to be in a minority of one in stating that the modality of intended relevance to verifiability is physical. The view that the relevant modality was logical was prevalent, but substantive and merely logical modality may sometimes have been conflated: I will suggest that the accounts of Ayer and Schlick appear to display such a conflation (although they both intended the relevant modality to be logical).

Using an example gleaned from Schlick, and following Schlick's discussion, Ayer introduces the notion of verifiability in principle as follows:

> No rocket has yet been invented which would enable me to go and look at the farther side of the moon, so I am unable to decide the matter [i.e. the truth-value of 'There are mountains on the farther side of the moon'] by actual observation. But I do know what observations would decide it for me, if, as is *theoretically conceivable*, I were once in a position to make them. And therefore I say that the proposition is verifiable in principle, if not in practice, and is accordingly significant. (1946, 36, my emphasis)

---

[29] This is not the same as the view that the verification principle is itself an empirical hypothesis. Despite all his protestations that the verification principle puts forth no hypotheses, and is not a theory, Schlick makes comments which appear to suggest this strategy, e.g., 'the "experimental theory of meaning"...proposes to be nothing but a simple statement of the way in which meaning is *actually* assigned to propositions' [1936](1979, 458-459). Carnap (1937b, 33) views the principle as a prescription, rather than an empirical or analytic truth. Here Carnap writes rather vaguely about 'the principle of empiricism'. We have previously noted that the verification principle is not entailed by the principle of empiricism. Nonetheless, in so far as we take the former to concern the criterion of meaningfulness and the latter as the epistemological position at the basis of that criterion, it is clear that Carnap is addressing himself to the former principle. That Carnap does not distinguish the two principles is consistent with his aspiration to restrict the language of philosophy to the formal mode: he would regard 'all non-analytic knowledge is empirical' as a material-mode version of the criterion of meaningfulness.

Ayer's account suggests a distinction between what is 'theoretically conceivable' and what is not. It will be recalled that the defence of essentialism proposed in the last chapter employed the notion of conceivability in such a manner that there is a limit to the predicates in terms of which an entity can be conceived, since some predicates are not compatible with the identity of the entity. This essentialist notion of conceivability cannot be what Ayer intends to employ, but his account appears to rely upon it to some extent. Ayer is attempting to draw a line between what I would observe if I were appropriately situated and what I could not observe under any circumstances. But the above passage introduces theoretical conceivability not at the level of what cognitive faculties a human being might have, but at the level of the pertinence of the circumstances under which those faculties would function appropriately to the affirmation or denial of a given statement. Ayer is clearly seeking to delimit the range of 'theoretical conceivability' so that it is conceivability relative to our cognitive apparatus which is relevant. But from the point of view of logic our having the cognitive apparatus that we happen to have is contingent. Since it is not logically necessary for us to have these cognitive faculties a theory which sets out to restrict the realm of literal meaningfulness to that which we can observe (given those faculties) is employing a substantive, rather than a merely logical, modality: thus, it is a metaphysical theory.

Ayer makes the following remarks about the involvement of the modal in the verification principle:

> all propositions which have factual content are empirical hypotheses...the function of an empirical hypothesis is to provide a rule for the anticipation of experience. And this means that every empirical hypothesis must be relevant to some actual, or possible, experience... (1946, 41)

Possible experience for whom? If we take it that the sort of experience referred to is that which it is possible for human beings to have, then we are dealing with a substantive *de re* modality.

> I distinguish between a 'strong' and a 'weak' sense of the term 'verifiable'...I explain this distinction by saying that 'a proposition is said to be verifiable in the strong sense of the term, if and only if its truth could be conclusively established in experience', but that 'it is verifiable, in the weak sense, if it is possible for experience to render it probable'. Ayer (1946, 9)

We have already seen that Carnap employs the *de re* grammatical form: in the quoted passage we see that Ayer also does so. The *de re* locutions he employs exhibit the form of the following: 'It is possible for experience to render *p*

probable'.[30] But if Ayer is really as hostile to *de re* modality (both grammatical and metaphysical) as he claimed throughout his career he cannot be taken to mean what the grammatical form of his locution entails. Rather, his claim must be reconstituted. The *de re* talk he actually uses is not equivalent to any *de dicto* talk, so we will have to speculate somewhat as to what Ayer really wishes to convey. Thus, we might recast 'it is verifiable, in the weak sense, if it is possible for experience to render it probable' as 'it is verifiable, in the weak sense, if it is logically possible that experience renders/will render it probable'. Unless the *de re* modality featuring in Ayer's locution can be shown to be predicated upon logical possibility, Ayer is helping himself to the sorts of modal locutions to which, *qua* positivist, he is entirely opposed because of their metaphysical status: the only modalities which are supposed to be recognized by positivists are those which are uninformative about the world. I do not claim that Ayer is making real essentialist claims, but that the use of *de re* modal locutions conflicts with his anti-metaphysical project at least so long as an account is not available whereby these locutions can be understood as embodying nothing more than the modal notions of logical necessity and logical possibility which are (supposedly exclusively) countenanced by him.[31] The logical positivists provided no such account and I have argued that no such account is possible. Although Ayer does not mention logical possibility specifically—the closest he comes is in his talk of what is 'theoretically conceivable'—we have seen that there is good reason why he must regard the intended modality pertaining to verification in principle as logical possibility.

Other writers, such as Hempel and Schlick, combined formulations of the notion of verifiability in principle explicitly in terms of logical possibility with pervasive employment of *de re* modal talk.

> Our concept of observation sentence is intended to provide a precise
> interpretation of the vague idea of a sentence asserting something that is
> 'in principle' ascertainable by direct observation, even though it may
> happen to be *actually incapable* of being observed by myself, perhaps

---

[30] I acknowledge that, *prima facie*, the locution indicated does not involve central modality *de re*, since 'experience' is not an agent, an individual or a species. However, in so far as it is *my* or *our* experience which is at issue the locution is elliptical for one involving talk of what it is possible for me or us to experience. Such talk clearly involves central modality *de re*.

[31] The qualification 'at least' serves as a reminder of a point previously mentioned: the logical positivists could not be non-metaphysical in their philosophy since they had views about the metaphysical status of the logical modalities. At best, they might have sought to attain a minimal metaphysics free from the employment of substantive modal notions. (Even the possibility of a minimally metaphysical philosophy may be dubious, since philosophers who eschew substantive modalities or modality *tout court* have not managed, in practice, to eliminate substantive modal talk. According to Marcus [1971](1993, 55 incl. n. 8) and Wiggins (1979, 154-155 n. 14) even Quine does not refrain from the use, respectively, of essentialist and *de re* modal talk.)

also by my contemporaries, and possibly even by any human being who ever lived or will live. Hempel [1950](1959, 110, my emphasis)[32]

Hempel appears to be indicating that anything which is possibly—in an unrestricted sense, regardless of actual incapabilities—subject to verification is meaningful. On the other hand, it appears that Hempel wishes to restrict meaningfulness, such that it is relative to the *actual* modalities which pertain, regarding, for example, our cognitive faculties and their relations with other aspects of the constitution of the actual world. This is suggested by his explication of his conception of an observation sentence:

> A property or a relation of physical objects will be called an *observable characteristic* if, under suitable circumstances, its presence or absence in a given instance can be ascertained through direct observation. Thus, the terms 'green', 'soft', 'liquid', 'longer than', designate observable characteristics, while 'bivalent', 'radioactive', 'better electric conductor', and 'introvert' do not. Terms which designate observable characteristics will be called *observation predicates*. Finally, by an *observation sentence* we shall understand any sentence which—correctly or incorrectly—asserts of one or more specifically named objects that they have, or that they lack, some specified observable characteristic. [1950](1959, 109-110)

In all this talk of observability it seems that Hempel is desirous of modal restrictions on meaningfulness relative to actual incapabilities. Hempel appears to attempt to promote the contradictory aims of providing an account of meaningfulness in terms of unrestricted possibility on the one hand, yet of restricting meaningfulness relative to considerations as to what happens to be the case concerning our sensory apparatus, the actual constitution of the world, and their relations. The notion of 'logically possible evidence' employed by Hempel [1950](1959, 111 n. 5) manifests the disregard for modal discriminations typical of the logical positivists and shared by many empiricists. The very phrase 'logically possible evidence' expresses much that was wrong in the logical positivists' attempts to provide a criterion of non-analytic meaning. It also sums up the contradiction at the heart of the account of verifiability in principle attempted by

---

[32] Hempel's concept of an 'observation statement' is analogous to Ayer's previously outlined concept of an 'observation-sentence'. Hempel [1950](1959, 110 n. 5) expresses verifiability (and confirmability) in principle in terms of 'logically possible evidence'. Later, he comments: 'As has frequently been emphasized in empiricist literature, the term "verifiability" is to indicate, of course, the conceivability, or better, the logical possibility of evidence of an observational kind...' [1950](1959, 111 n. 6). Cf. Stace's use of logical possibility talk in his specification of the '*Principle of Observable Kinds*' (1944, 218): '*A sentence, in order to be significant, must assert or deny facts which are of a kind such that it is logically possible directly to observe some facts which are instances of that class or kind...*'. Also, cf. Hempel [1950](1959, 115 n. 11).

Hempel. The phrase 'logically possible evidence' is messy. Does it relate to that which it is possible for us to observe, or to that which is logically possible, for example that it might have been the case that our cognitive faculties were other than those we in fact have (thus altering the range of observability)? It is evident that Hempel did not make up his mind on this issue: if the former is adopted then we have a *de re* modal attribution, the metaphysical innocence of which must be illustrated. The prospects for such a demonstration of the metaphysical innocence of *de re* modal attributions are anything but promising.

According to Schlick, 'verifiable certainly means nothing but "capable of being exhibited in the given"' [1932b](1959, 88). He adds:

> verifiability is used here in the sense of 'verifiability in principle', for the meaning of a proposition is, of course, independent of whether the conditions under which we find ourselves at a specified time allow or prevent the actual verification. There is not the least doubt that the proposition 'there is a mountain of the height of 3000 meters on the other side of the moon' makes good sense, even though we lack the technical means of verifying it. And it would remain just as meaningful if one knew with certainty, on scientific grounds, that no man would ever reach the other side of the moon. The verification remains *conceivable*; we are always able to state what data we should have to experience in order to decide the truth or falsity of the proposition; the verification is *logically* possible, whatever be the case regarding its practical feasibility, and this alone concerns us.

On one reading, Schlick appears to operate with a revisionary notion of logical possibility as restricted relative to our cognitive faculties. That reading is dependent upon taking 'capable of being exhibited in the given' as conveying that which it is actually possible for us to experience. In accordance with this reading, Schlick is operating with a substantive modal notion. If this reading is rejected, as is advisable given the positivists' anti-metaphysical pretensions, Schlick is still guilty of employing *de re* modal locution, in the phrase just quoted. This may just be slovenly talk on his part. It is plausible that it is just so, since Schlick [1932b](1959, 89) distinguishes sharply between logical and empirical modalities and quite explicitly states that the modality pertaining to the notion of verifiability in principle is logical:

> One cannot...suppose that the distinction between the impossibility of verifying something in principle and the mere factual, empirical impossibility is not clear, and is therefore sometimes difficult to draw; for the impossibility *in principle* is logical impossibility which does not differ in degree from empirical possibility, but in very essence. What is empirically impossible still remains conceivable, but what is logically impossible is contradictory, and cannot therefore be thought at all.

This is reiterated in 'Meaning and Verification', where Schlick distinguishes between two uses of 'possibility': 'empirical possibility', which is defined as compatibility with the laws of nature, and 'logical possibility' which is defined as that which can be described [1936](1979, 462-464).[33] 'It must be emphasized', writes Schlick, 'that when we speak of verifiability we mean *logical* possibility of verification, and nothing but this' [1936](1979, 464). Schlick proceeds to specify verifiability as mere accordance with grammatical rules, which he takes to be arbitrary [1936](1979, 466). (He erroneously opines [1936](1979, 467) that a construction is either grammatically well-formed or not, and that there is therefore an absolute difference between meaningful and meaningless constructions.[34]) The immediate consequence of such remarks is that the anti-metaphysical credentials of verificationism are radically undercut. There is nothing ill-formed about many of the examples of metaphysical discourse mentioned by the logical positivists, e.g. 'the Absolute enters into, but is itself incapable of, evolution and progress'.[35] Furthermore, since meaningfulness is unconstrained, on Schlick's account, by empirical modalities, it appears that the way is left open for talk, for example, of a transcendental realm or a noumenal reality empirically accessible to beings with cognitive faculties other than ours, or even to us, should our cognitive faculties change:

> There are...many questions which can never be answered by human beings. But the impossibility of finding the answer may be of two different kinds. If it is merely empirical in the sense defined, if it is due to the chance circumstances to which our human existence is confined, there may be reason to lament our fate and the weakness of our physical and mental powers, but the problem could never be said to be absolutely insoluble, and there would always be some hope, at least for future generations. For the empirical circumstances may alter, human facilities may develop, and even the laws of nature may change...[1936](1979, 466)[36]

---

[33] It is interesting to note Schlick's move from talk of two kinds of possibility (in the earlier paper) to talk (in this piece) of two uses of the word 'possibility'. This is relevant to some comments made by Hacking which will concern us later. (I do not imply that Schlick's articles are in contradiction.)

[34] The correct view, that well-formedness admits of degree, is propounded by Chomsky (1965, 11, 148-153).

[35] A remark 'taken at random' from F.H. Bradley's *Appearance and Reality* by Ayer (1946, 36).

[36] The lack of restrictiveness afforded by Schlick's conception of verifiability is evidenced by his admission [1936](1979, 470-471) that it allows talk of personal survival after death; furthermore, 'immortality...is an empirical hypothesis, because it possesses logical verifiability'. The lack of restrictiveness is further illustrated by his claim that 'only logical possibility of verification is required [not empirical possibility]. And verification without a "mind" is logically possible' [1936](1979, 481).

Schlick employs *de re* modal locutions here.[37] His last sentence may be slightly paraphrased to render this even more evident, such that 'It is possible for empirical circumstances to alter, it is possible for human facilities to develop and it is even possible for the laws of nature to change'. Schlick is definitely making modal predications *about the world*. This is incompatible with the positivist agenda whereby necessity and possibility have their sole residence in linguistic convention. It is also incompatible with the anti-metaphysical project. The positivist may attempt to get off the hook by indicating, for example, that empirical possibility is just that which is logically consistent with the laws of nature. However, quite apart from the other problems associated with such a response (and indicated above), given the lack of equivalence between the forms 'It is possible that *p*' and 'It is possible for *A* to *x*', that response will not do—assuming, that is, that logical modalities are not paradigmatically *de re*. (I will proceed to defend that assumption in the next section.)

The form of my dialectic so far in this chapter has been as follows. There is some confusion over the nature of the modality involved in the notion of verifiability in principle. The stated intention of most positivists was that logical modality pertained. I agreed that this is as it should be, since substantive modalities are at odds with their anti-metaphysical (and, of course, anti-essentialist) intentions. I set about illustrating how *de re* modal locutions were employed nonetheless, and I attributed this to modal confusion on the part of the positivists. Substantive modal talk pervades positivist writings: it is at the heart of their attempts to explain the notion of verifiability in principle. I have repeatedly emphasized that the *de re*/*de dicto* distinction is grammatical rather than metaphysical. Nevertheless, the onus is upon the philosopher who employs *de re* modal constructions to provide an account of the metaphysical status of such talk. If one seeks to banish metaphysics one is required to exorcise all *de re* modal talk from one's philosophical armoury, since it is no good helping oneself to such talk on the basis that some anti-realist account of it can be provided. That is no good because one precludes oneself from either asserting or denying any metaphysical claim. If one seeks to reject real metaphysical modality *de re* one must either avoid all such talk or, if one is prepared to allow the retention of metaphysics, provide a viable anti-realist account of such modality. The relevant requirements went unmet by the logical positivists.

If verification in principle rests upon substantive possibility *de re*, verificationism is incompatible with anti-essentialism and anti-metaphysics. What is possible for us, or for beings with our cognitive faculties, to verify cannot be explicated in terms of logical possibility. Cognitive faculties involve substantive modality *de re*, so the attempt to restrict meaningfulness by relativising it to our cognitive faculties involves substantive modality *de re*. Our cognitive faculties pertinent to empirical verification relate to that which it is possible for us to observe: they are abilities inherent in us. I know of no plausible reduction of the

---

[37] Cf. Schlick's use of the notions of capability and ability [1938](1979, 288, 292).

abilities of a thing (a *de re* notion) to talk of logical possibility (a *de dicto* notion).[38]

If, on the other hand, logical possibility is what is relevant, then the restrictions on cognitive meaningfulness would be such that what is to count as a literally meaningful statement would relate to that which it is logically possible that beings with our cognitive faculties would verify. Let us take modal attribution *de re* as a paradigmatic example of metaphysical discourse. Setting aside the logical problems relating to indirect verifiability, I concede to the positivist that it is not logically possible, concerning a statement of substantive modality *de re*, for the statement to be verified by us. I make this concession because it is entailed by the approach to logical modalities inherent in the epistemology adopted at 2.2. A statement of substantive modality *de re* that is known is dependent upon an *a priori* modal major premise. Necessary truths are true in virtue of their conceptual content and are such that, fundamentally, they do not admit of empirical justification. Given that they have purely conceptual status in respect both of metaphysics and of epistemology, no empirical data counts towards their fundamental justification. (I do not deny that such data can count towards

---

[38] Dummett (1976, 110-111, 114, 116-117, 136) and Misak (1995, 56) illustrate the centrality of human capacities and abilities to verificationism. (Indeed the notion of ability is central to Dummett's very formulation of the task of a theory of meaning as the pursuit of 'a theoretical representation of a practical ability' (1976, 69, cf. 70-73), i.e., the ability to use a language.) In the absence of a viable anti-realism about modality *de re*, Misak's claim (1995, xi) that verificationism and realism are in conflict is open to doubt, although work is no doubt required in order to substantiate that doubt. Given Dummett's own conception of verification in terms of 'actual human capacities' (1976, 136), and his characterization of decidability, as it bears upon the acceptance or rejection of the principle of bivalence for a class of statements, as relative to *our* powers (1976, 102), it appears that his position is misrepresented by Appiah (1985, 29), who claims that 'verifiability has to do with logical possibility...as Dummett's talk of verification "in principle" indicates'. (We have already seen that it is by no means clear that talk of verification in principle is a reliable indicator that logical possibility is taken to be central to verifiability. Cf. Dummett (1976, 99-100), although I disagree that realist views require a generous, i.e., epistemically unrestricted, interpretation of 'in principle possible' as it occurs in 'a...regulative principle [*K*] governing the notion of truth: If a statement is true it must be in principle possible to know that it is true'.) Edgington (1985, 36) comments that a conception of verifiability in terms of logical possibility constitutes 'a vacuous restriction on truth'. She gives a broad characterization of verificationism as acceptance of the principle K, that 'If "p" is true then it is possible to know that p', adding that she does not see that K 'even expresses a "broadly empiricist temper", at least until we have some restrictions upon the endowments of possible knowers' (1985, 36-37). The comment raises a paradox at the heart of verificationism. In order to render epistemically constrained notions of truth and meaning, facts about human faculties must be brought to bear. These facts, however, contravene the traditional empiricist commitment, often taken to be essential to empiricism, that there are no modalities in nature, since faculties relate to metaphysical modality *de re*. The claim that realism and verificationism are in conflict is often predicated upon a transcendentalist characterization of realism which conceptualist realists reject. (One of the misfortunes of contemporary realism/anti-realism debates is that the characterizations of realism which have gained sway are those advanced by writers of anti-realist predilection.)

justifying the beliefs of particular thinkers.) Knowledge of the relevant concepts themselves yields the knowledge that the relevant truths do not admit of empirical justification.[39] From my concession to the logical positivists it does not follow that statements involving essentialist attribution or substantive modality *de re* are cognitively meaningless. In fact it is via analysis of their cognitive content that it is recognized that they are neither analytic nor empirically verifiable. Such statements are known neither through relations of ideas, nor through empirical observation. Rather, they are hybrids: their truth is inferred from a necessary major premise and an empirical minor premise. They possess both empirical and non-empirical content. It is not logically possible that their truth can be secured merely by empirical means: this is an *a priori* truth which derives from an understanding of the non-empirical content involved, by the lights of the epistemology for substantive modality *de re* I have supported (at 2.2).

Contemporary empiricists who recognize the naivety of the anti-metaphysical project but who renounce essentialism still face the acute problem of having either to reject *de re* modal locutions or to provide a viable anti-realist account of such modality. The latter strategy has been attempted, but the anti-essentialist is faced with the formidable problem that the most commonly followed path, the attempt to reduce modality *de re* to modality *de dicto*, is illegitimate. Moreover, the illegitimacy of that path arises from considerations of a logico-grammatical nature, not via metaphysics. Anti-realist strategies tend to admit modalities only as, at best, operators on *dicta*: we have seen this in the case of eliminativism and projectivism. I have previously commented that, given the logico-grammatical considerations just mentioned, this is a formidable obstacle in the way of the development of a workable projective account of non-logical modalities.

A Note on van Fraassen[40]

An example of a contemporary empiricist who employs the *de re* modal form, yet wishes to retain traditional hostility to essentialism, is Bas van Fraassen. According to van Fraassen,

---

[39] Cf. Peacocke (1993, esp. 197).

[40] I have said my piece against the more thorough elements of anti-realist conceptualism which characterize van Fraassen's views. Wiggins has done enough to illustrate the centrality of modality *de re* to the very singling-out of entities. My primary concern here is to illustrate van Fraassen's own heavy dependence upon the *de re* modal idiom, his (in my view inadequate) attempt to account for that idiom, and the parallels between the position I claim he is in with regard to modality *de re* and the case of the logical positivists as described above. With some threat of indulging in hyperbole, my claims in both cases might be taken to suggest that just as, in Dummett's words, the 'ambition to abolish metaphysics was positivism's greatest illusion' (1992, 145), so the ambition to abolish essentialism is the greatest illusion persistent in contemporary empiricism.

> empiricism requires theories only to give a true account *of what is observable*, counting further postulated structure as a means to that end. In addition, empiricists have always eschewed the reification of possibility (or its dual, necessity). Possibility and necessity they relegate to relations among ideas, or among words, as devices to facilitate the description of what is actual. (1980, 3)

He acknowledges (1980, 217 n. 6) that he helps himself to *de re* modal talk. This is illustrated by his claim that 'what counts as an observable phenomenon is a function of what the epistemic community is (...*observable* is *observable-to-us*)' (1980, 19). He holds (1980, 198-199) that *de re* modal attributions can be explained as follows:

> modality appears in science only in that the language naturally used once a theory has been accepted, is modal language....We do not say that the burning of copper at room temperature and pressure has no counterpart in any model of our physics; we simply say that it is impossible. Once the theory is accepted...it guides our language use in a certain way. The language we speak at that point has a logical structure which derives from the theories we accept.[41]

However, this fails to answer the point that talk of the 'observable' and the 'empirically attestable' cannot itself be explained in such a manner. The limits of our experience are radically under-determined by the scientific theories we happen to accept; if that were not the case then experience could never be recalcitrant with theory. Indeed, van Fraassen himself regards 'what is observable as a theory-independent question. It is a function of facts about us *qua* organisms in the world' (1980, 57-58). Thus, he is precluded from explaining-away all *de re* modal talk along the anti-realist lines he seeks to develop, since a type of *de re* modal attribution crucial to his philosophy is precluded from having its locus (solely) 'in the model' (1980, 202).[42] In addition, even supposing that there could be an entirely extra-modal empirical theory, any modalizing habits which might ensue upon the acceptance of such a theory could not legitimately be described as having a 'logical structure which derives from the theories we accept'. Rather, the logical structure of particular *de re* modal attributions derives from general principles governing the modal notions employed therein. The logical structure of neither the principles nor the attributions derives from the empirical theories we accept. The logico-grammatical form of *de re* constructions cannot be explained by appeal to

---

[41] Cf. (1980, 202): 'The locus of possibility is the model...the language we talk has its structure determined by the major theories we accept.'

[42] However, he comments (1980, 217 n. 8) that 'the scientific theories we accept are a determining factor for the set of features of the human organism counted among the limitations to which we refer in using the term "observable"'. This appears, in contrast to (1980, 57-58), to be an epistemological, rather than a metaphysical, point.

our acceptance of non-modal empirical theories. The best van Fraassen can hope for, therefore, is some purely psychologistic account of our employment of such constructions.

Observability relates to what it is *possible for us* to observe. This modality is clearly *de re*, yet the notion of observability-for-us is at the heart of empiricist philosophy, both in its positivist and in its contemporary incarnations. In the absence of a viable ontological reduction of modality *de re*, this foundation stone of empiricism is incompatible with the post-Cartesian empiricists' continued insistence that there is no modality in nature and that the only intelligible notions of objective modality are, at best, the *de dicto* notions of logical necessity and possibility (and perhaps relativized versions thereof).[43]

4.3 Logical Possibility as Typically *De Dicto*

In the preceding section I attempted to characterize the modality intended by the logical positivists to feature in the notion of verifiability in principle. I claimed that the logical positivists mostly intended logical possibility to be the relevant modality. However, it should be clear from the comments I made in rendering this characterization that there was ambiguity in their accounts because, I have been contending, they conflated substantive modal talk and talk of merely logical possibility. I have been suggesting that they did not have the right to help themselves to such substantive modal talk, since they professed to reject essentialism. (Although the use of such talk does not in itself commit one to essentialism, if one rejects essentialism then one is bound either to reject such talk or to provide a viable anti-realist reconstruction of such talk. The latter path is obviously metaphysical.) The logical positivists did so, it seems, because they did not recognize that substantive modal talk for what it was: they thought they were sticking to their empiricist guns and employing only logical modalities, with any other modalities being seen as mere subsidiaries of logical modalities. This failure may have been born from disregard for the broadly Aristotelian tradition from whence the elucidation of discrete sorts of modal locution came. In order to justify the direction of the polemic I have mounted so far it is necessary to go into some more detail regarding the notion of logical possibility.

Much of what I have written has rested upon the idea that the logical modalities are best construed as *de dicto*, rather than *de re*. I claim that even if the notions of logical possibility and necessity can be rendered in terms of modal locutions *de re*, they are not typical cases, since the *res* referred to will be linguistic and/or abstract entities, which are *res* only in an extended sense, the word usually being understood to relate only to concrete (spatial/temporal)

---

[43] This is illustrated by the centrality of appeal to observability-for-us in the definition of empiricism given by van Fraassen (1980, 202-203), despite the fact that, according to that formulation, the empiricist professes to reject the idea that there is modality in nature.

entities.[44] A statement of logical possibility such as 'It is logically possible that *p*' may be rendered into the *de re* form: 'It is possible for *p* to *x*', where *x* relates to the performance of some function apposite to logically possible *dicta*, such as the ability to feature, without itself entailing a contradiction, as a premise in a valid argument. As we have seen, by refusing to rule out the possibility that logical modalities may be rendered *de re*, one does not thereby commit oneself to the view that what are modally qualified in such cases are anything other that *dicta*. Essentialist claims about contingent existents are not explicable via necessary propositions since such claims, properly construed, are paradigmatically *de re* and paradigmatically *de re* modal attributions do not reduce to modality *de dicto*.

Hacking on Logical Possibility

Hacking (1975) claims not only that logical possibility can be *de re*, but that it is *de re* 'sometimes or always' (1975, 333). In essence, his argument is as follows:

> 1. Logical possibilities are most appropriately expressed in the subjunctive mood.
> 2. Locutions in the subjunctive mood are of the (*de re*) form (II),
> i.e., 'It is possible for *A* to *x*'.
> Therefore, logical possibility is sometimes or always *de re*.

Although I reject the argument, the conclusion is not, in itself, inconsistent with the views I support herein, since I claim only that logical possibility is paradigmatically *de dicto*, without prejudice to the issue of whether it is sometimes or always *de re*. Nonetheless, Hacking's argument is intended to suggest that logical possibility is paradigmatically *de re*. That suggestion is both at odds with my project and, for reasons given below, objectionable in itself. It should be noted that, although characterizing logical possibility as paradigmatically *de re*, Hacking (1975, 335) comments that:

> it would be fatuous to contend that just because of my grammar, we must reject any concept of *de dicto* logical possibility....We are at liberty to say that a statement which does not entail a contradiction is logically possible, and we are free to utter the sentence *It is logically possible that p* in the indicative mood, to express that fact.

My view differs from Hacking's in that I take the *de dicto* idiom to be paradigmatically, rather than merely permissibly, implicated in statements of logical possibility. Furthermore, Hacking (1975, 333) provides '*It is logically*

---

[44] Three conceptions of abstractness are outlined by Lowe (1995, 513-514), the first of which I employ in the text above. The correlative conception of concreteness is employed by Lowe (1994b, 531). Cf. the elucidation of the concrete/abstract distinction offered by Hoffman and Rosenkrantz (1994, 182-187, esp. 184-185).

possible for A to x' as illustrative of *de re* logical possibility. This differs from my analysis in the following respects. Granting the grammatical acceptability of Hacking's construction, I deny that logical possibilities directly concern agents/individuals and activities. At best, if logical possibilities were to be depicted in terms of us and our cognitive operations, *dicta* would be manifested in the relevant constructions and the relevant verbs would indirectly parallel the noun phrases which pick out those *dicta*. In addition, I hold that the word 'logical' drops out of (II)-style constructions which are truly expressive of logical possibility and that *dicta* are manifested in the (II)-style constructions where the verb directly parallels the noun. Accordingly, the construction provided by Hacking is inconsistent with the semantics for logical possibility claims: in fact, I doubt that it could be provided with semantically intelligible instances.

Hacking's claims (1975, 332-333) are built upon 'appeal to authority': he has it that Moore 'said logical possibilities should be expressed in the subjunctive mood'. Moore (1962, 187) provides the following as examples of logical possibilities:

> It's possible that I should have been seeing exactly what I am seeing, [and] yet should have had no eyes.
> I *might* have been seeing what I am [and] had no eyes.
> It's possible that every dog that has ever lived should have climbed a tree.

The first and the third of Moore's examples might be read as of the form (I), 'It is possible that *p*'. This would place in question Hacking's supposition that if logical possibility is expressed in the subjunctive then it is of the form (II), 'It is possible for *A* to *x*'. If we read Moore's examples as of the form (II) then they will lack equivalence to the 'corresponding' (I) readings, since we have already established, on the basis of the views of Moore and Hacking themselves, that (I) and (II) are non-equivalent forms. That Moore's examples employ the subjunctive does not show that logical possibilities should be so expressed nor that they are or should be typically so expressed. That they admit of expression in the subjunctive does not show that they are of the form (II). I have already expressed my view that although logical possibilities may admit of *de re* formulation there are good reasons for preferring to express them via (the *de dicto* form) (I), not least of which is the fact that no *res* (unless that notion is stretched quite remarkably) is picked out in logical possibility statements, and that even if we do view *dicta* as *res*, the fact remains that no concrete *res* seemingly referred to in a (I)-style logical possibility formulation is picked out.[45] So, Hacking's claim that logical possibility is typically *de re* does not appear to be particularly well-founded, and we have ample

---

[45] I adopt the broadly Fregean position, supported below, that words which ordinarily function as genuine names lose their ordinary references when they feature in modal constructions *de dicto*.

reason to regard it as false, or at least inutile. However, Hacking has a separate reason for viewing logical possibility as typically *de re* which rests upon his reading of Kripke.

Rigid Designation and Logical Possibility

Hacking reports that having reached the conclusion that logical possibility is typically *de re* he thought that it would be met with incredulity by others. However:

> Then Kripke...changed everything. There is now a viable explication of *de re* logical modalities. On my account of *ø-ly possible*, it is logically possible for *A* to *x* if there is nothing of a logical sort that absolutely prevents *A* from *x*-ing. After Kripke we are able to say what it is for something of a logical sort absolutely to prevent *A* from *x*-ing. It has long been known, I think, that it is something to do with criteria for individuating *A*: if they are such that *x*-ing would preclude the individuation of an individual as *A*, then it is not possible for *A* to *x*. (1975, 333)

These comments conflict with the tenet that concrete objects and logical objects are distinct. Logic does not study concreta. That is a tenet which we should not relinquish. Rather, logic studies entailment relations between propositions. (This is not to say that those propositions cannot concern concreta but merely that propositions are not themselves concreta.) Moreover, it should already be clear, on the basis of comments integral to my prior defence of non-objectual modal realism, that I am precluded from agreeing with Hacking's comments here, and can only regard them as deviant and unhelpful. I have already explicated sortal essentialism in terms of metaphysical modality *de re*, in contrast with logical modality. I have taken the latter to be typically *de dicto* and I hold that it is entirely inappropriate to the explication of essentialist metaphysical theses concerning concrete entities. In respect of Hacking's comments quoted above, I hold that where *A* is a concrete entity there is typically no restriction of a *logical* sort preventing *A* from *x*-ing.
Hacking contends that when we compare

> *it is logically possible for Elizabeth II to have had parents other than George VI and his wife Elizabeth* and *It is logically possible for the present Queen of England to have had parents other than George VI and his wife Elizabeth*...according to Kripke, if she is born of the persons stated, then my first statement about Elizabeth II is false, and the second is true. (1975, 333-334)

Hacking holds this view on the basis that 'Elizabeth II' designates rigidly, whereas 'the present Queen of England' designates non-rigidly. However, the fact (granting

that it is one) that 'Elizabeth II' designates rigidly entails that those very words, wherever they occur, are fulfilling a referential role only if the standard explication of rigidity in terms of referential stability in modal contexts of the form (I) works. In my view that condition goes unmet. Putnam (1990, 62) claims that: 'When terms are used rigidly, logical possibility becomes dependent upon empirical facts.' However, it is a mistake to specify rigidity in terms of modal contexts of the form (I): modal idioms are not exhaustively *de dicto*. Modal contexts of the form (II) are typically extensional. Rigidity, linked as it is to essence, ought to be specified in terms of referential stability in respect of constructions pertaining to metaphysical modality *de re*. This does not constitute a revision of Kripke's fundamental insight concerning referential stability, but rather a rejection of the move from the claim that, e.g., 'Aristotle' exhibits referential stability through whatever counterfactual suppositions consistent with his identity we make about Aristotle, to the claim that 'Aristotle' exhibits referential stability in *all* modal contexts. In considering what Aristotle might have been or done our concern is with substantive possibility *de re*; with *possibilities for Aristotle*. Kripke's move does not accord with the *de re*/*de dicto* distinction as understood by Wiggins (1974; 1976; 1979; 1980), Mondadori (1995) and myself. His move rests upon both this and his attendant tendency to depict essences and *de re* abilities in terms of necessary and possible truths. Referential stability through *de re* modal contexts does not require referential stability through *de dicto* modal contexts. Given that suppositions about what was possible for Aristotle concern the former, Kripke's move is mistaken. The considerations via which he introduces the notion of rigid designation sanction only *de re* modal stability. Accordingly, the characterization of rigidity in terms of referential stability in all modal contexts is mistaken. If Kripkean considerations about possibilities for Aristotle are intended to sanction a notion of rigidity as referential stability in all modal contexts they fail to do so. If the notion of rigidity is predicated upon possibilities for the ordinary referents of proper names then it does not require referential stability in all modal contexts but only in *de re* modal contexts. I take it that the latter scenario best accords with Kripke's fundamental insight and that the move to talk of referential stability in all modal contexts is mistaken. I deny that rigidity is relevant to the logical modalities because (i) I take such modalities to be *de dicto* and thereby referentially opaque; and (ii) I take reference to concrete entities to be entirely irrelevant to the question as to what is to count as logically possible. (My position is thus in total disagreement with Putnam's view.) The notion of rigid designation can be maintained independently of restrictions on logical possibility by realizing that it requires only *de re* modal stability. Hacking's interpretation rests on the hidden, and implausible, premise that if a word ordinarily functions as a rigid designator it always fulfils a referential role.[46] In pain of tautological triviality, an expression

---

[46] I take my view to be advantageous in that it does not allow metaphysical necessities pertaining to concreta to restrict logical possibilities. It permits the retention by possible worlds talk of its expressive functions relating to (unrestricted) logical modalities. It also allows us to adhere to an explication (although not, of course, a reduction) of logical

designates an object in the concrete realm only when it picks out *res*. Logical possibility, being typically *de dicto*, not, as Hacking supposes, *de re*, is such that when words appear in statements of logical possibility, even if they ordinarily designate *res* (and even if they do so rigidly), they lose their ordinary referents. A statement of logical possibility makes no predication concerning concrete reality, so there is no reference to that reality.[47] Whatever its initial implausibility, this view unites the semantics and the epistemology of *de dicto* modal claims and, as I will outline, it saves us from some less plausible accounts of logical possibility inspired by the new essentialism. My claim that words which ordinarily name lose their (usual) referents in modal locutions *de dicto* is after the fashion of the Fregean claim,[48] rightly described as no 'mere dodge' by Dummett [1967](1978, 105; cf. 1973, 90-91, 190, 266), that expressions which refer in ordinary (i.e., transparent) contexts lose their referents in opaque contexts, referring instead to their senses.[49]

---

modalities in terms of contradiction, whereas if this was to be admitted on Hacking's account then that would involve an unacceptable, and, I do not doubt, unworkable, revision of the standard notion of contradiction. It will be apparent that my view is entirely at odds with Putnam's one-time suggestion (1975, 233) that 'Once we have discovered that water (in the actual world) is H_2O, *nothing counts as a possible world in which water isn't H_2O*. In particular, if a "logically possible" statement is one that holds in some "logically possible world", *it isn't logically possible that water isn't H_2O*.' On my account a metaphysical impossibility such as the impossibility (granting that it is one) of water being anything other than H_2O does not translate into the (spurious) logical impossibility mentioned by Putnam. Putnam has more recently written (1990, 69) that 'a criterion of substance-identity that handles Twin Earth cases' will not 'extend handily to "possible worlds"', since substance-identity involves logically contingent laws of nature. This motivates the comments that 'the question, "What is the necessary and sufficient condition for being water *in all possible worlds?*" makes no sense...this means that I now reject "metaphysical necessity"' (1990, 70). Given Putnam's change of view, the rejection of metaphysical necessity is not necessary: what is necessary is the rejection of the idea that all metaphysical necessities hold in all logically possible worlds. Accordingly, in contrast to Putnam (1990, 56-57, 71), physical necessity is classifiable as a species of metaphysical necessity, since the latter encompasses considerations concerning the natures of contingent existents.

[47] According to Read (1995, 109): 'genuine names pick out an item in the actual world and maintain that reference in any modal context'. That, however, would undermine the standard notion of logical possibility. In defending his 'moderate realism' about possible worlds Read (1995, 106-117) does not distinguish between logical and metaphysical modalities. Further, he describes (1995, 109) 'necessarily, Cicero is Tully' as a '*de re* modal truth'. This last is a typically Kripkean, although well-entrenched, mistake: its lineage laces the history of modern empiricism, from whence it is inherited by contemporary essentialists.

[48] As Angelelli (1967, 63) indicates, Frege himself had little interest in the modalities. However, this historical point is no obstacle to an application of the Fregean claim to the modal case. Frege [1879](1980, 4-5) displays crudity in his brief comments on possibility, e.g., in that he presents '"a chill may result in death"' as a case in which 'a proposition is presented as possible'.

[49] Although Frege held that sentences containing non-referring terms such as 'the present king of France' lacked truth-value he did not deny that they had sense. Thus, only in extensional contexts is the lack of truth-value of a constituent sentence deemed, by Fregean

The postulation of senses is not, *contra* R.M. Martin (1987, 185), an *ad hoc* manoeuvre designed to cope with opaque contexts. Rather, as Dummett suggests, the distinction between sense and reference is indispensable to the maintenance of a distinction between grasp of meaning and knowledge of truth-value. A theory which is equipped with the distinction is, in turn, equipped to handle opaque contexts. Dummett (1973, 90) comments that to postulate sense merely as a means of coping with opacity would be to postulate sense on a poorly-reasoned basis: but the sense/reference distinction is sanctioned, and indeed shown to be needed, by independent considerations, i.e. those pertaining in extensional contexts (1973, 91, 143). That the distinction equips us to cope with opacity is one of its virtues, not its predominant rationale. My claim that words which ordinarily name lose their (usual) references in modal locutions *de dicto* involves no breach of compositionality: it accords with the Fregean principle enunciated by Dummett (1973, 153) that the 'sense of a complex sentence is...composed of the senses of its constituents'.

I follow Dummett (1973, 268-269) in eschewing the Fregean notion of indirect sense. Accordingly, an expression in an opaque context retains its ordinary sense and that sense becomes its reference. Thus, opaque contexts breach another Fregean principle enunciated by Dummett (1973, 84, 91), namely, that the referent of an expression is never a constituent of the meaning of a complex sentence in which it features.[50] This is apposite to the modal case, since, for a class of analytic necessities (i.e., those the knowledge of which requires neither proof nor

---

lights, to render the complex sentence in which it features neither true nor false. It should be noted that the employment of a broadly Fregean notion of sense entails no universally platonistic commitment, since it can be held that there are senses which are ontologically dependent upon language-users. We ought not to balk at the suggestion that, accordingly, some broadly logical necessities are ontologically dependent upon us. Cf. Hymers (1996, 604): 'concepts have no existence outside cognitive practices [so analytic truths have] no existence outside such practices either'. If there had been no notion of marriage, there would have been no concept *bachelor*, but it is broadly logically necessary that bachelors are unmarried men. To say that it is true in all possible worlds is just to say, in this case, that it is constitutive of the very concepts at issue that bachelors are unmarried men. The truth of the claim that bachelors are unmarried men is secured by the very concepts themselves. In accordance with the distinction between ontologically dependent abstracta and pure abstracta (Dummett (1973, 509-510); Divers (1990, 253)) only the latter are abstracta as traditionally, i.e., platonistically, conceived, since the latter but not the former are not ontologically dependent upon concreta. *Contra* R.M. Martin (1987, 183-185), the postulation of sense does not involve us in subjectivism; the thesis of the objectivity of sense is no more problematic than the thesis of the public nature of meaning.

[50] For exegesis of the Fregean principle, see Dummett (1973, Chapter 5). The principle goes unheeded by Jubien (1993, 23 and *passim*), who identifies the notion of *reference* with that of (Russellian) propositional *constituency*, i.e., the idea—adopted by Fine (1995, 276)—that the ordinary referents of terms are constituents of the propositions in which the terms occur. The latter view is of the kind which the Fregean sense/reference distinction is designed specifically to avoid. Thus, what Jubien christens 'the Fallacy of Reference' in fact designates two separate theses which, far from being identical, are not necessarily in harmony.

calculation), grasp of meaning and grasp of truth-value coincide.[51] (Analyticity does not require non-informativeness. Once this is realized there is no need to claim, as does Hymers (1996, 604), that we do not know the truth value of Goldbach's conjecture because we do not fully understand its meaning in the absence of proof. Rather, Goldbach's conjecture is a case in which grasp of meaning is insufficient for knowledge of truth-value.[52])

Since the notion of rigid designation is related to that of essence, it is explicable only in terms of constancy in *de re* modal contexts, not in terms of retention of reference in *all* modal contexts, since *rigid designators (often, i.e. at least where their ordinary referents are concreta) lose their references in sentential modal contexts.*[53] The philosopher who thinks this outrageous or intuitively unappealing should consider the cost of its rejection, namely the acceptance of an unduly restrictive and philosophically inutile revision of the notion of logical possibility. (In addition, some of the philosophical views which motivate the rejection of the position I adopt are inherently unattractive: they contain excessively extensionalist elements which involve the seeming repudiation of the sense/reference distinction.)

Hacking (1975, 333) holds that 'in the domain of the "logical", Kripke's scheme enables us to treat nonrigid designators as ranging over a set of "stipulated" individuals'. That is why, according to Hacking, it is true that *it is logically possible for the present Queen of England to have had parents other than George VI and his wife Elizabeth.* My account, however, admits the truth of *it is (logically) possible that Elizabeth II is not the daughter of George VI and his wife Elizabeth.* It admits that truth even if we take it that Elizabeth II is the actual biological product we believe her to be, since logical possibility is not pertinent to concrete entities.

Hacking may have been misled into thinking that Kripke is offering a new notion of '*de re* logical possibility' by some comments which Kripke actually makes. [54] The comments I have in mind include the following examples:

---

[51] The view, rejected by Wiggins (1974, 339) that 'if two words have each, by our own making, the same sense then we must know that they have the same sense' does not follow from my view: rather, when we know what each of two such words means we will have a case of analytic knowledge. Analyticity concerns not words—any word might have had a different meaning—but meanings. (Given my general philosophical indebtedness to Wiggins I note, for the record, that I disagree with the anti-Fregean approach to genuine proper names he adopts at (1974, 338-339). His position is seemingly predicated upon the supposition that the retention of Fregean sense for proper names leads to anti-Kripkean descriptivism. I agree with Dummett (1973, 97-98) that descriptivism is unessential to a Fregean view.)

[52] I am indebted to Bob Hale for pointing out a previous deficiency in my discussion of the relationship between grasp of meaning and grasp of truth-value in the analytic case.

[53] Burge (1977, esp. 347) is suggestive of an exception to this principle, in that the presence of some—specifically indexical—elements in a construction which displays the *de dicto* syntactic form entails that it involves paradigmatic predication *de re*.

[54] Hacking (1975, 334) mentions 'central *de re* Kripkean logical possibility'.

characteristic theoretical identifications like 'Heat is the motion of molecules', are not contingent truths but necessary truths, and here of course I don't mean just physically necessary, but necessary in the highest degree—whatever that means. (Physical necessity, *might* turn out to be necessity in the highest degree. But that's a question I don't wish to prejudge. At least for this sort of example, it might be that when something's physically necessary, it always is necessary *tout court*.) (1980, 99)

The third lecture [of *Naming and Necessity*] suggests that a good deal of what contemporary philosophy regards as mere physical necessity is actually necessary *tout court*. (1980, 164)

Necessity 'in the highest degree' is usually taken to be logical necessity, i.e., truth in all possible worlds. This may lead Kripke's readers to suppose that he takes the logical modalities to concern concrete entities (and thus to be centrally *de re*). Kripke's account is ambiguous on this point and the ambiguity allows interpretations like that of Hacking to get off the ground. However, Hacking's interpretation can be refuted and Kripke's account can be tidied up. Since Kripke comments that non-logical necessity may be necessity in the highest degree he may be read as implying that logical possibility is restricted by true statements of metaphysical necessity *de re*.[55] My earlier suggestion that metaphysical and logical modalities can and should be distinguished is at odds with such a tenet. I will now try to show that a similar distinction is in fact employed by Kripke, but that it is not consistently—or at least not always clearly—applied by him, this latter fact enabling Hacking's account to have some basis in what Kripke actually writes. It will be recalled that one of the considerations with which I attempted to justify my distinction between logical and metaphysical modalities was that logically necessary truths contrast with statements of metaphysical necessity *de re* in that the former are taken to hold independently of considerations as to what exists (or, at the very least, as to what exists contingently). Logical necessity can be explicated in terms of truth in all possible worlds. Where metaphysical necessity is concerned this need not be the case, because the relevant objects can be such that they need not exist. Kripke (1980, 102) claims that '"Hesperus" and "Phosphorous", when used as names, are rigid designators. They refer in every possible world to the planet Venus'. One might suspect that Kripke is here in danger of identifying logical and metaphysical modalities, but he is more careful, stating that 'when I say "Hesperus is Phosphorous" is necessarily true, I of course

---

[55] My account has been permeated with the distinction, drawn by Wiggins (e.g., 1980, 110, 214), between a necessarily true statement and a true statement of metaphysical necessity *de re*. If incorporated into Kripke's account this important and neglected distinction banishes much confusion.

do not deny that situations might have obtained in which there was no Hesperus and no Phosphorous' (1980, 109).[56]

The possibility is thus open that there are worlds in which 'Hesperus is Phosphorus' is not true, since there are worlds in which Venus does not exist.[57] This is consistent with the considerations regarding contingency and existence which I recruited in my drive for a distinction between logical and metaphysical modalities. Other important issues are outstanding, however, and they will be addressed after the following digression.

Digression: Univocity and Strength

An issue which has lingered covertly in my considerations of the differences between logical and metaphysical modality is that of whether 'necessity' and 'possibility' are univocal (i.e. whether each has a single sense). A separate, although sometimes undiscriminated issue,[58] is that of whether all necessity is of one strength, or whether objective non-logical necessity is somehow weaker or less binding than logical necessity. I regard the latter issue as more interesting than the former, as much for the rhetorical role it has played in the implicit debate between empiricists and Aristotelian realists as for its intrinsic philosophical merits. I suspect that much that has been written about it has largely missed the boat, resting on a failure by disputants on both sides to separate distinct issues regarding logical force on the one hand and metaphysics on the other. In this respect, the disputants have truly been talking at cross-purposes, the empiricists aiming to establish the superior strength of *the notion* of logical necessity over any (purported) notion of metaphysical necessity, the Aristotelians aiming to establish that, where a metaphysical necessity holds, its binding force, *from a metaphysical point of view*, is no less than is the case in respect of any other sort of necessity. One suspects that both sides have viewed themselves as challenging the other, but with neither fully realizing what the other is actually proposing. If we distinguish between the logical force of modal *notions* and the ontological force of the *modalities*, we can accept that there is a sense in which logical necessity is the strongest necessity and that this need not conflict with the essentialist claim that (there is another sense in which) metaphysical necessity is at least as strong as logical necessity. I will explain this in due course; first let us consider the univocity thesis.

---

[56] He does not wish to involve himself in questions relating to the truth-value and modal status of the assertion in such situations.

[57] See 2.2 for a fuller account of the implications of this point, including an account of why the appeal to weak necessity is unsatisfactory. There, I contended that *de re* modal attributions are typically committed to the actual existence of their subjects. Thus, I am committed to the view that free logic—i.e, in the words of Hughes and Cresswell (1996), 293), 'logic "free" of existential assumptions'—cannot provide such attributions with the correct semantics. I am grateful to E.J. Lowe for comments on this.

[58] The two issues are conflated by Fisk (1973, 27-28).

Modal notions come in species. The univocity thesis is not incompatible with this idea, because from the premise that 'necessity' has a single sense it does not follow that the notion of necessity comes in only one species.[59] In this, matters are no different from the case of the word 'mammal'. The possibility of qualifying a word in order to render and distinguish specific (derivative, technical or semi-technical) senses of the word (e.g., as in the cases of 'terrestrial mammal', 'aquatic mammal', 'logical necessity' and 'metaphysical necessity') does not preclude that word from having a single overarching sense. So, even if the univocity thesis holds, it poses no threat to the distinction I make between logical and metaphysical necessity *qua* notions: each is a subject-specific qualification of the general notion of a restriction or compulsion which does not admit of deviation. There is no entailment relation (in either direction) between any decision regarding the univocity thesis and any position regarding the issue of strength.

Those who take it that non-logical modalities function (solely or primarily) as sentential operators distinguish between, for example, epistemic possibility (which relates to ignorance of the truth-value of a statement) and *objective* notions of possibility, such as logical, metaphysical and physical possibility, in the following manner.[60] It is held (e.g. by McFetridge (1990, 136-137) and Hale (1996, 93-95)) that the objective possibility that p, but not the epistemic possibility that p, entails the logical possibility that p. (For example, on a classical account, our ignorance of the truth or falsity of Goldbach's conjecture does not entail that it is logically possible that it is false: that is what is at issue.) One way in which objective non-logical necessity is then understood to be weaker than logical necessity is as follows: whatever is logically necessary is non-logically necessary, whereas whatever is non-logically necessary need not be logically necessary.[61] In relation to physical necessity Bacon (1981, 134) expresses this as:

---

[59] Cf. Hacking (1967, 159-162, 164). According to Fisk (1973, 26): 'Physical and logical necessity are distinguished not by distinguishing two species of necessity but by distinguishing the physical from the logical truths to which the necessity applies.' However, his account rests upon his erroneous explication of physical necessity as of the form (I) — i.e., 'it is necessary that p'—despite his description, here and elsewhere, of physical necessity as *de re*. He fails adequately to distinguish necessarily true statements and true statements of physical necessity.

[60] I embrace the distinction, but I believe this cannot be the correct way to draw it, since this way distorts the logico-grammatical form of the non-logical modalities.

[61] Cf. McFetridge (1990, 136-137): 'On certain traditional assumptions...if it is logically necessary that p, then it is necessary that p in any other use of the notion of necessity there may be (physically, practically *etc*.). But...the converse need not be the case.' Also, cf. Hale (1996, 94-95). On such accounts, the notion of strength is explicated such that if the necessity$_1$ of a proposition always entails that the proposition is necessary$_2$ without the converse being the case, then necessity$_1$ is stronger than necessity$_2$. In accordance with his adoption of this explication of the notion of strength—i.e., in this context, logical force— Hale (1996, 95) comments that friends of the notion of metaphysical necessity 'are committed, at the very least' to denying that logical necessity is the strongest necessity. It will be apparent, from my vehement denial of the appropriateness of the *de dicto* form to (at least) a large class of metaphysical necessities, that I am not that kind of friend and that I

'physical necessity follows from logical necessity, but not vice versa'. Such a view has already been rejected on the grounds that physical necessity, *qua* species of metaphysical necessity *de re*, does not admit of explication in terms of the *de dicto* form (I). In a more recent account, which has affinities with Bacon's view, the late Ian McFetridge sought to establish not only that there is no necessity stronger than logical necessity, but that logical necessity is the strongest necessity. It is clear that it is logical force which is his concern, rather than the strength of the ontological compulsions which might attend the objective modalities. McFetridge (1990, 136-137) outlines the 'traditional assumption' that, where objective modal notions are concerned, 'if it is logically necessary that *p*, then it is necessary that *p* in any other use of the notion of necessity there may be (physically, practically, *etc.*). But...something could be *e.g.* physically necessary without being logically necessary.'

McFetridge seeks to defend this traditional assumption. However, we have already noted that it cannot do the job of showing that logical necessity is the strongest necessity, because not all notions of possibility and necessity can be portrayed via the use of sentential modal operators. If the account of metaphysical necessity *de re* that I have adopted is correct then at least a large class of such modality cannot function in the manner required by McFetridge's account.

According to McFetridge (1990, 137), 'if the person [who has made a claim of the form "Necessarily, *p*"] will accept no non-epistemic sense in which it is possible that not-*p*, his...claim did involve the *strongest* necessity *i.e.* (on the traditional assumption) "logical" necessity'.

In relation to this claim two points should be observed. Firstly, if the account of essentialist claims that I have adopted (after Wiggins) is correct, then (at least a large class of) claims employing the notion of metaphysical necessity *are not* of the form 'Necessarily, *p*'. Here McFetridge displays an attitude similar to that of those obstinate empiricists who refuse to recognize any role for modalities except that of functioning as operators on *dicta*.[62] Since the objective

---

take Hale's claim to be incorrect. In light of my account of metaphysical necessity, I neither assert nor deny the claim attributed by Hale to the friend of metaphysical necessity, since both courses involve the distortion of the true form of *de re* modal claims (which I take to relate to typical instances of metaphysical necessities and possibilities). Hale's claim is incorrect for the further reason that the defender of metaphysical necessity need not be committed to the denial of the thesis that the logical force of logical necessity is greater than that of metaphysical necessity if, as I will indicate below, that thesis can be explicated independently of the method adopted by McFetridge and Hale with its attendant distortion of the form of modal attributions involving objective non-logical modalities.

[62] Consider this remark (1990, 137-138, my emphasis), which overlooks the venerable idea that there is a kind of necessity that is not propositional at all:

> There might be views which held that there were at least two notions of necessity, only one of which was involved in ascriptions of validity, and which were incommensurable in strength: some *propositions* possess the 'logical' notion of necessity but lack the other one, while others possess this latter notion of necessity but are not logically necessary.

modalities are not exhausted by those which admit of unproblematic *de dicto* expression, some of them drop out of (proper) consideration in McFetridge's argument. Secondly, even granting that all objective necessity is *de dicto*, there is an obvious gap in McFetridge's argument: the conclusion that there is *a strongest* notion of necessity does not follow from his premises. At best, as Hale (1996, 98) observes, the argument shows only that there is no notion of necessity stronger than logical necessity.

Even if there is an objective sense in which it is possible that a true statement of metaphysical necessity is false, it does not follow that metaphysical necessity is weaker, in point of ontological compulsion, than the necessity corresponding to the relevant possibility. Since the argument that McFetridge offers is concerned with the logical force of notions of necessity, rather than with their strength in point of ontological compulsion, this point may be regarded as of dubious merits. However, part of the import of the point is that it indicates the lack of observance, in McFetridge's argument, of any distinction between a necessarily true statement and a true statement of metaphysical necessity. Also, in so far as that argument can be seen as an attempt to rebuff the essentialist, it is worth pointing out that, were an essentialist to claim that metaphysical necessity is absolute, the claim being made might be a metaphysical claim, rather than a claim about the logical force of modal notions. Kripke is a realist about metaphysical necessity, and where he claims that it is (perhaps) necessity in the highest degree he may be viewed as making a metaphysical claim about that real necessity (which may be seen as a rebuke to orthodox views of Humean descent), not a claim about the logical force of a notion of necessity. It is unfortunate, though, that Kripke describes 'theoretical identifications like "Heat is the motion of molecules"' as 'not contingent truths but necessary truths' (1980, 99) since this conflates true statements of metaphysical necessity and necessarily true statements; a conflation which I take to be contrary to the spirit of Kripke's essentialism and inconsistent with any cogent essentialism.

Wiggins claims that the constraints on conceiving *de re* (set out at 1980, 106) embodied in his essentialism concern

> a necessity that is not in the narrow sense logical necessity. But its *strength* (contrast certainty) is equal to that of logical necessity. For once the theoretically fundamental sortal property f is fixed upon and its extension comes to light, it is not for thought to renege even hypothetically upon the determination of how a thing falling within that extension has to be in order to [be] an f ([to] belong to f). That would weaken thought's grip of its object. If f determines an ultimate sort...then there is nothing else that a particular entity falling inside the sort could oblige the conventionalist by acquiescing to become instead. To *be*, for such a thing just is to comply with this ultimate or near ultimate concept f. (1980, 146)

This seems to me to be a *clear* case in which the *strength* in question concerns the ontological compulsion involved in real necessity *de re*, rather than the comparative logical force of logical and non-logical modalities. This is manifested by the deictic-nomological background of Wiggins's claims, and by his emphasis on being and the extensional. Were the friend of metaphysical necessity to claim that such necessity is at least as strong, in this (ontological) sense, as any other necessity, then that claim would be very different from any claim about strength in the (logical force) sense which concerns McFetridge and Hale. Furthermore, no stance on the latter issue threatens the ontological claim.

Another way in which notions of objective non-logical necessity are understood to be weaker than the notion of logical necessity relates to the explication of modal notions via the possible worlds device. Since the class of logically possible worlds is held to be more inclusive than the class of metaphysically or physically possible worlds, it is held that logical possibility is weaker than these other modal notions, and accordingly that logical necessity is stronger than metaphysical or physical necessity since logical necessities, unlike non-logical necessities, pertain in (unrestrictedly) all possible worlds. Unlike the explication, adhered to by Bacon, McFetridge and Hale, of strength in terms of the 'traditional assumption', I take this to constitute a convincing heuristic by which the notion of logical necessity can be shown to be stronger, in point of logical force, than all other objective notions of necessity. What does not follow, however, is that the ontological compulsion involved in real metaphysical necessities is any weaker than that involved in logical necessities; the former may even be stronger, in this sense, than the latter.[63]

Real metaphysical necessities *de re* hold in virtue of the natures of entities in the actual world. That such necessities do not hold in all logically possible worlds should cause the essentialist no chagrin. True statements of metaphysical modality *de re*, unlike true statements of logical modality, are typically *relative* to the natures of actual entities.[64] It is indeed the case that (at least a large class of) metaphysical necessities are relative in the sense that there is an objective notion of possibility in light of which it is possible that statements of those necessities are false. The denial of a true statement of metaphysical necessity may constitute a logical possibility, as I will attempt to show later in this chapter. So, although there is an intelligible sense in which logical necessity is stronger than metaphysical or

---

[63] The lack of entailment from the logical force point to the ontological point is all the more pertinent given that the possible worlds device is not genuinely explicative of the *metaphysics* of modality.

[64] This points to the well-worn distinction (mentioned at 3.2) between necessity and essentiality, since many necessities which hold of individuals, sometimes called 'trivially essential', are such that they are not aptly explained in terms of the individual's nature. It is necessary for Socrates to be such that he is not both seated and unseated, but this, many essentialists take it, is not a truth deriving from the specific nature exemplified by Socrates. Rather, its truth derives from *a priori* logical principles. That is one reason why I hold that metaphysical modalities *de re* are *typically*, rather than always, relative to natures.

physical necessity, it does not follow that this conclusion carries with it any *metaphysical weight*: it does not show that the relevant non-logical necessity is in fact less *ontologically binding* than logical necessity. For the essentialist, other possible worlds need not always reflect real possibilities. The possible worlds device is intended to be expressive of metaphysical, physical, and especially logical modalities. But, as we have seen, logical possibilities are not substantive and only substantive possibilities are real in the sense of relating to concrete entities; which is not, of course, to dispute the objective status attributed to logical possibility. The essentialist, then, can suggest that logical necessity is no stronger (in the metaphysical sense) than metaphysical necessity *de re*, since logically possible worlds are not real in the sense that substantive metaphysical possibilities are real. (Most of those who employ the possible worlds device do so, in any case, because of its expressive power and heuristic utility, particularly in relation to logical modality, rather than through any metaphysical commitment.)

Kripke, Metaphysical Necessity, Possible Worlds

I distinguished, at 3.2, between metaphysical and logical modalities, the latter of which, but not the former, I take to be unrestricted. (The distinction was illustrated using the case of the modal status of Leibniz's principle of the Identity of Indiscernibles within his system.) In accordance with the account I offer, not all possible worlds express real metaphysical possibility: possible worlds talk is wider in that it is expressive of merely logical possibility. The possible worlds device will fail to secure many of the benefits widely purported to accrue to its employment if it is precluded from handling logical modalities, since it is primarily intended to provide an extensional semantics for discourse involving sentential modal operators.

Kripke (1980, 35) classifies the notion of necessity as metaphysical and the notion of the *a priori* as epistemological. There is some obscurity as to whether Kripke intends to describe all necessity as metaphysical, or whether he is referring only to necessity *de re*. This is compounded by what Wiggins (1974, e.g, 328) has called the 'metalinguistic' trappings of Kripke's account of necessity *de re*: for example, Kripke goes on to speak, apparently without heed to the *de re/de dicto* distinction, of this metaphysical notion of necessity as relating to the truth or falsity of *statements*.[65] I hold that Kripke's account is consistent with mine in that he regards metaphysical and logical modalities as distinct. I also contend, however, that although this commitment is central to the spirit of Kripke's essentialism, it is something which he fails to honour: in this he is no different from many of his essentialist contemporaries and successors.[66] There is additional ambiguity in

---

[65] This is despite Kripke [1971](1977, 67). The tendency will be illustrated forthwith. The criticism applies whether or not the 'metaphysical notion' of necessity relates to all necessity or solely to necessity *de re* as pertinent to concreta.

[66] My claim concerning the spirit of Kripke's essentialism is supported by comments he himself makes, e.g., [1971](1977, 69), where he recognizes that cases of modality *de re*

Kripke's account relating to the role of possible worlds talk. This ambiguity is, in my view, contributory to the genesis of interpretations such as that offered by Hacking (1975, esp. 333-335). Having shown that Kripke does indeed endorse a distinction between logical and metaphysical modalities I will suggest that the ambiguity as to the function of possible worlds talk can and should be clarified.

I have already commented that Kripke regards not all necessary truths as logical necessities, on the basis that Kripke regards 'Hesperus is Phosphorus' as necessary but does not take it to be true in all possible worlds. Although Kripke writes of non-logical necessary truths, we can, following Wiggins, more aptly say that objective non-logical necessities are expressed by true statements of metaphysical necessity *de re*, rather than necessary truths. Although Kripke seems, in some sense, to favour the view that logical and metaphysical necessities are equally binding, he regards not all metaphysical necessities as logical necessities.[67] He does not explicate a notion of *de re* logical possibility at all and he recognizes that logical modalities are typically *de dicto*. So, Hacking's belief that Kripke proposes a *de re* revision of the standard notion of logical possibility is unjustified. Although Kripke recognizes a distinction between logical necessity and the necessity which features in modal attributions about contingent existents, he might have been more careful so as to fully preserve and respect the distinction. (One such respect—his depiction of metaphysical necessity *de re* in terms of 'necessary truth'—has already been observed.)

Possible worlds talk is held to be valuable in virtue of its expressive utility. (We need not hold that this is an advantage which possible worlds talk has over other modal talk. Like Kripke, we can view it as heuristically useful, without deeming possible worlds talk philosophically or expressively superior to modal discourse free of such talk. I will proceed to suggest that possible worlds talk has expressive capabilities which outstrip and, if we are not careful, undercut, essentialist theses.) For the modal primitivist, the value of possible worlds talk is primarily heuristic. Such talk is intended, among other things, to express logical modalities. It is here, however, where certain rather dangerous ambiguities arise in Kripke's account. Kripke (1980, 15) writes:

> if one wishes to avoid the *Weltangst* and philosophical confusions that many philosophers have associated with the 'worlds' terminology...'possible state (or history) of the world', or 'counterfactual situation' might be better. One should even remind oneself that the 'worlds' terminology can often be replaced by modal talk—'It is possible that...'

concern objects, not statements, although, as I have commented at 2.2. above, the letter of his formulations in which *de re* necessity is held to feature misrepresents its form.

[67] As is evidenced by his admonition that the necessity which features in modal attributions concerning contingent existents be interpreted 'weakly' [1971](1977, 68). Nevertheless, the notion of weak necessity advanced therein is misbegotten, since it attaches to statements and cannot, therefore, properly be expressive of such attributions.

The alternative terminologies which Kripke suggests are of dubious merits. For, example, a statement of merely logical possibility can be such that it could not be, or even have been, true of the actual world at all. Logical possibility statements make no predications concerning concrete entities: rather, their content is purely conceptual. For this reason, 'possible state (or history) of the world' terminology will fail to equal the expressive (and semantic) power allegedly attaching to worldly terminology, since the former will fail to encompass (true) statements of merely logical possibility. There are logically possible statements which could not feature in true descriptions of possible states or histories of the actual world. This is a corollary of a point explained by Burgess (1996, 25):

> possibility in the 'metaphysical' sense of what (is or isn't but) *potentially could have been* the case is not to be analyzed as or conflated with possibility in the 'logical' sense of what *it is not logically or analytically self-contradictory to assert or assume actually is* the case.

Accordingly, Kripke's suggestion (1980, 18; cf. 20, 48 n. 15) that possible worlds are total '"ways the world might have been", or state histories of the *entire* world' is unacceptable, since if it is taken up then possible worlds terminology cannot express merely logical modalities, i.e., the very modalities which motivate their introduction. Similarly, there are logical possibilities which are not translatable into 'counterfactual situation' terminology so long as the 'counterfactual situations' are taken to concern ways *this entity* and/or *the world* might have been. McFetridge (1990, 135-154) argues for the indispensability of the notion of logical necessity on the basis that it is integral to the whole project of reasoning from suppositions: it will already be clear, on the basis of previous comments, that these suppositions will be suppositions *that p*. I suggest that the value of logical possibility is very closely related. The notion of logical possibility allows us to make suppositions which are wildly contrary-to-fact. Thus we can reason from suppositions of the form (I) ('It is possible that *p*') which do not qualify as ways the world might have been at all (and which do not describe any concrete entities at all). In this sense, logical possibility is truly unrestricted. The next section illustrates how the permissiveness of the notion of logical possibility relates to its value.

4.4 Logical Possibility: Its Nature and Value

Strictly and Broadly Logical Possibility

A distinction may be made between logical modalities narrowly and broadly conceived.[68] Thereby, strict logical possibility involves the absence of formal

---

[68] Cf. Haack (1978, 173) and Hale (1996, 94).

contradiction. Broadly logical possibility, in turn, arises from the meanings of non-logical terms, rather than just the logical constants.[69] Both conceptions involve meaning: the distinction arises from the locus of the meaning at issue in each case.[70] There is no strict formal contradiction involved in a supposition to the effect that bachelors may be married. The meanings of noun phrases are irrelevant to strictly logical modalities. In accordance with the integral role of logical modalities in the practice of reasoning from suppositions, logical possibility is unrestricted in that even broadly logical impossibilities may be strictly logically possible.

Strictly logical possibility is more liberal than broadly logical possibility. I am motivated to attach some importance to the distinction partly by a desire to avoid the conflation of substantive and merely logical modalities. Such conflation might arise from extensionalist views of meaning, as embodied, for example, in Putnam (1975, 215-271).[71] Given the recognition that the meanings of non-logical terms have a determining influence upon broadly logical modalities, the danger is that the extensionalist will be tempted to let extensional factors impinge upon the determination of those modalities. As we have seen, Putnam (1975, 233; contrast 1983, 63-64) has succumbed to this temptation, as have other philosophers of essentialist persuasion.[72] I do not retract my commitment that logical modalities,

---

[69] On my account, this precludes neither broadly logical impossibilities not reducible to contradictions nor logical necessities not reducible to logical truths.

[70] Cf. Wiggins (1979, 156 nt. 27):

> logical truth is...forced upon us by the meanings of the logical constants. By this criterion not even 'all bachelors are unmarried' qualifies. Because logical necessity in the useful and strict sense is exigent, the species of possibility which is its dual is hopelessly permissive.

The distinction is implicit in Quine (1980, 20-24); cf. Romanos (1983, 109). As should already be clear, Plantinga's excessive conception (e.g., 1974, v, 1-2), mistakenly intended to include the necessity pertaining to essential attributions, of 'broadly logical necessity' is rejected on my account.

[71] Putnam (1975, 227) comments that '"meanings" just ain't in the *head*'. As should be clear from my approach to logical modalities, the extensionalist has no monopoly on the thesis of the objectivity of meaning.

[72] According to Seddon (1972, 483):

> One move is to argue that although the statement that 'A bar of iron floats on water' is not explicitly self-contradictory, it is implicitly so, for we are saying that a mineral with a specific gravity of less than one (*i.e.* it floats), has a specific gravity in the range 7.3-7.8 (*i.e.* it is iron), and this is a contradiction, and is therefore logically impossible.

This move is adopted by Rasmussen (1977; 1983). I take the contrary view, deeming matters concerning real definition entirely irrelevant to considerations regarding the logical modalities.

broadly or narrowly conceived, are non-substantive. I urge that the intensions of ordinary names for concrete objects, but not their extensions, bear upon the determination of broadly logical modalities.[73] This is consistent with the conceptualist realist approach to essence and modality *de re* that I adopt. So far as concerns the logical modalities, facts about the natures of concrete entities and deictic-nomological restraints upon *conceiving of* such entities are irrelevant. So far as concerns the modalities, reference to concrete natures bears only upon the objective *non*-logical modalities. Allowing extensional factors to impinge upon logical possibility, I will suggest, undermines the utility of the notion.

Given that only intensional meaning is admissible as a determinant of broadly logical modalities, it may be suggested that there is no need to place much emphasis on the distinction between strictly and broadly logical modalities. The extensionalist has been warded off: the threatened conflation of substantive and merely logical modalities is no longer immanent. However, the distinction has additional value in that it accords well with the considerations relating to reasoning from suppositions to which I have alluded. It allows for situations in which a reasoner may lack the relevant epistemic background pertaining to broadly logical modalities (i.e. the reasoner may lack knowledge of the relevant intensions: this accords with the Fregean thesis of the objectivity of sense). Benardete (1962, 346 n. 3) suggests that there 'is no contradiction, in the strict formal logical sense, in asserting that some ideas *are* made of tin, yet that freedom from self-contradiction does not suffice to make the thing logically possible'.[74] However, Benardete's claim is at best arbitrary, if not question-begging. If a construction is grammatically well-formed and declarative, i.e., if we are really dealing with a statement, and if that statement embodies no formal contradiction, then it is logically possible in the strict sense. In view of the objective status of logical modality it is not surprising that logical impossibilities may escape detection and can even be believed.[75]

Logical Possibility: Elimination, Revision, Conservation

---

[73] Cf. Strawson (1966, 225).

[74] Interestingly, and in contrast, a similar example, 'the sound of a trombone is blue', was offered by Russell (1940, 170) as 'perhaps' a logical possibility. Such examples, called 'selection errors' by syntactic theorists after Chomsky (e.g., 1965), are described by Wolfram (1989, 33) as occurring where 'the wrong sort of property or activity is predicated of the subject'. That description is suggestive that substantive metaphysical considerations have some sway here. There is a marked difference between selection errors and unquestionably ill-formed constructions (such as Wolfram's example, 'Cats blows the wind' (1989, 32)), in that the former, but not the latter, clearly admit of internal negation. I see no reason for deeming selection errors either logically impossible or meaningless: I admit them as logical possibilities. Cf. Hodges (1977, 154) who deems them false.

[75] Cf. Collins (1967, 53).

Entrenched abuses of the notion of logical possibility and purported difficulties concerning its definition or its discernment have led some philosophers to regard it with some suspicion. Various positions, including revision of the notion and denial that logical possibility is any kind of possibility at all, have been adopted. Occasionally philosophers have appeared to advocate the elimination of the notion. I believe that such positions have arisen through the tendencies to too closely associate the very notion with the aforementioned abuses and to view metaphysical considerations concerning substantive possibility as a threat to the notion of logical possibility without bearing in mind the question as to what that notion is actually *for*. The tendency to revise the notion in light of one's metaphysics is also manifested in work which is not motivated by suspicion of the notion. We have already seen this is the case of Putnam, who (at one time) allowed (purported) facts about the natures of actual existents such as water to delimit logical possibility. Similarly, Plantinga (1974, v, 1-2 and *passim*) proposes a notion of 'broadly logical necessity', intended to be implicated in the expression of substantive modal attributions *de re*,[76] without ever asking what the notion of logical possibility is actually for, and without addressing the legitimacy or otherwise of his own usage. I view Plantinga's proposal as both revisionary and, like his attempt to explicate essence and modality *de re* in terms of modality *de dicto*, misguided. I will briefly survey and criticize the views I reject. This will serve to substantiate my own position, which I take to be conservative.[77] (Philosophers whose interests are primarily metaphysical ought to bear in mind the question as to the value of the notion of logical possibility so as not to be misled into providing a distorted account of its nature or adopting an unduly hostile attitude towards the notion.)

Eliminativism about logical necessity is not viable so neither is eliminativism about logical possibility. It is worth noting that many accounts critical of the notion of logical possibility make no mention of its correlative. I take this to substantiate my suggestion that such accounts have tended to allow their own metaphysical commitments with regard to real possibility, and their attendant anti-empiricism, to cloud their philosophical judgment: surely, one who seeks to revise or banish logical possibility has either to revise by the same lights, or to deny the centrality to the notion of deductive consequence and the whole practice of philosophy of, its correlative. Neither course is tenable.

---

[76] Cf. Plantinga (1970, 475), 'a possible world is a state of affairs that could have obtained if it does not. Here "could have" expresses, broadly speaking, logical or metaphysical possibility.' It is not clear that Plantinga takes 'logical' and 'metaphysical' to mark any distinction here. On my account, many states of affairs which could not have obtained nonetheless constitute logical possibilities.

[77] I take it that the notions of logical necessity and logical possibility are not pre-philosophical. It may be suggested that there is no historically continuous notion of logical possibility at play, but various shifts from one notion of logical possibility to another: cf. Hacking (1975, 334-335). In so far as a core notion of logical necessity has persisted since ancient times this suggestion can be regarded as harmless to the case I will present. That there is such a core notion is suggested by McFetridge (1990, 136) after Aristotle, *Prior Analytics*, 24b19-22.

Antipathy to the reckless applications to which empiricists have attempted to put the notion of logical possibility has led anti-empiricists to reckless views on that notion. For example, Cook (1994, 155) depicts 'the idea of "logical possibility"' as something which 'burdens us' if we adopt 'the Humean view of causation'. Given the indispensability of logical necessity we can hardly agree that its correlative is burdensome. The point is, rather, that the notion has been abused and that we must recapture clarity by rending the notion free of the legacy of that abuse. It is the abuse which is burdensome and which is up for elimination, not the notion.[78] Cook charges that 'the idea of "logical possibility"...leads...to a peculiar view of the way in which philosophy is to construct and deal with examples', i.e., that the notion has a detrimental effect upon philosophical methodology. The distinction I have defended between conceiving *of* (*de re*) and conceiving *that* (*de dicto*), affords the view that the 'leading' about which Cook is concerned comes about through historical accident, and through confusion, rather than being internal to the very notion of logical possibility. By the lights of the distinction, merely logically possibilities have significant bearing on neither our epistemology where matters *a posteriori* are concerned nor our substantive metaphysics.

Some philosophers (Rinaldi (1967, esp. 97); Seddon (1972, esp. 481); cf. Toulmin (1958, 169-172); Mason (1988, 11)) have claimed that 'logical possibility' is a misnomer which fosters confusion. According to Seddon (1972, 481),

> we all know that it is *not* possible for a bar of iron to float on water...if we insist that it is nonetheless *logically* possible, we invite the comment that we are using the word 'possible' in a very odd way, and that we will need good reasons for such a striking departure from ordinary usage. I doubt that good reasons are forthcoming.

My account of logical possibility is already equipped to deal with Seddon's remarks since it maintains that it is *not* the case that *it is logically possible for a bar of iron to float on water* since this conflates modality *de re* and *de dicto*. When logical possibility is used, as is appropriate, to qualify a *dictum*, the difficulties alluded to by Seddon are avoided. This involves no deviant use of the word 'possible'. In addition, the notion of logical possibility is technical. There is no reason why it should comply with 'ordinary usage'. Once we have a clear view of how the notion of logical possibility should properly serve us the difficulties which Seddon purports to present are entirely avoided. As long as it is clear, as I have recommended, that logical possibility talk is not just about genuinely possible

---

[78] Mason (1988, 11) writes that the notion of logical possibility 'has some uses...but in most circumstances it is a notion which (as Hume would say) we should commit to the flames'. This is an injudicious comment, since a notion is either up for elimination or not. The point is to discriminate between the legitimate and illegitimate *applications* of the notion. It is the latter which must be expunged from our philosophical practice, not the notion itself. This is in line with the tenor of Mason's discussion.

states of affairs (i.e. ways the world could be), there is no need to be so extreme. We need only bear in mind that logical possibility qualifies *dicta* rather than concrete entities. Logical possibility is a variety of possibility, it is just that it is distinct from concrete possibility: there is no misnomer involved.

On my account, both empiricists and essentialists have been guilty of failing properly to observe demarcations between logic and metaphysics where modalities are concerned.[79] I have sought to maintain a clear distinction, certainly in practice, and I hope also in theory, between merely logical modalities and substantive metaphysical modalities. In the words of Rasmussen (1983, 537), I claim that 'confusion results from using "it is logically possible that" in reference to beings *in rerum natura*'. Unlike Rasmussen, I take this to be a sufficient condition for confusion.[80] Rasmussen's actual, and in my view subversive, intention is to use the word 'logical' in reference to the natures (essences) of concrete objects. Thus, he seeks to restrict logical possibility in a manner akin to that displayed by Hacking's Kripke. As we have seen, a similar view is entailed by some of Putnam's work, and is implicit in Plantinga's category, intended to encompass essentialist modalities for concreta, and taken up by Davies (1981, 187-201), of 'broadly logical possibility'. My account conserves logical possibility, abandoning the pretension that logical possibilities involve reference to concrete entities. Rasmussen, Putnam, and Plantinga seek to uphold the pretension and revise logical possibility.[81] We can distinguish between the extensional/real-

---

[79] Compare the case of the attendant failures to afford due recognition to the *de re*/*de dicto* distinction and to the form of essentialist claims.

[80] Rasmussen's weaker claim is that

> confusion results from using 'it is logically possible that' in reference to beings *in rerum natura*, solid iron bars, cats, etc., but retaining a sense to the term 'logical' that confines the object of analysis to the [nominal] definition of the entities in question and not their respective natures. (1983, 537)

[81] It is with good reason that I tar Plantinga and Putnam with the same brush as their less-renowned contemporary: all three philosophers give accounts of logical modality and modality *de re* which allow extensional factors pertaining to real essences to impinge upon the logical modalities. In a remark reminiscent of Putnam's extensionalism, Rasmussen (1983, 533) complains that 'appeals to "meaning"...do not constitute some special access to what is and is not logically possible for beings *in rerum natura*'. What this indicates, however, is the inappropriateness of the idea that logical possibility does so relate to concrete entities, rather than the need to revise the notion of logical possibility, relativising it to substantive considerations concerning the natures of real existents in the concrete realm. I take Rasmussen's view to be the most misguided of the three, e.g., since, unlike Putnam and Plantinga, his account of concepts and logical possibility at least fails to *explain* how we can reason using concepts which lack extension and perhaps fails to *allow* for this. Rasmussen's remark (1983, 515) that 'concepts...are inherently relational and are necessarily of or about something other than themselves', conjoined with his thoroughgoing extensionalism, suggests that only that which is instantiated can feature in our reasoning.

essential and intensional/nominal-essential aspects of concepts, which leaves room for the claim that logical possibilities relate at best to the latter. An essentialist view of concepts need not restrict logical possibilities in so far as we distinguish between *de re* and *de dicto* conceiving. On the account I have offered, after Wiggins, it is inconceivable for a solid iron bar to float on water, since an entity which can float on water does not have the persistence principle of a solid iron bar. Any conceiving going on can therefore not be conceiving *of* an iron bar. Nonetheless the logical possibility of the statement that an iron bar floats on water is in no way undercut. The restriction on conceiving *de re* is in virtue of metaphysical necessity *de re*: there is no such restriction on conceiving *de dicto*. Claims about the natures of concreta are not founded upon *de dicto*, or logical, necessities.[82] The accounts of Rasmussen, Putnam and Plantinga show no awareness that there is logical room for the position I adopt according to which, for example, it is impossible for iron bars to float on water but logically possible that iron bars float on water.[83] My account, unlike those I brand revisionary, respects the utility and the formal and *a priori* nature of the logical modalities.

4.5 Closing Remark: Empiricism and Essentialism

Despite their desire to eliminate metaphysics, the logical positivists did not banish substantive modal talk from their philosophy. Like empiricists before and since, they conflated the notions of logical possibility and substantive possibility, thus neither successfully banishing objective non-logical modalities nor properly respecting the useful notion of logical possibility. Some of those who responded to the empiricist abuse of logical possibility proposed their own revisions of the notion, others adopted eliminativist views. Such views are untenable and the motivation behind their adoption is undermined by clarifying the nature and utility of the notion of logical possibility. This, in turn, promotes the restriction of the notion to its proper role.

      Despite the rejection of positivism and the vogue for broadly Aristotelian realism which took place, the conflation of logical modalities and metaphysical

---

[82] Rasmussen (e.g., 1977, 117, 120, 122) is yet another example of a philosopher who takes true essentialist attributions about concreta to involve necessary truths.

[83] Machan, (1969, 40-42) complains about Hospers's claim (1967, 173), that it is logically possible for a solid iron bar to float on water. Contrary to Machan's apparent supposition, however, it does not follow from the rejection of Hospers's claim that the proposition that an iron bar can float on water is not logically possible. Machan (1969; 1970) provides a disastrously revisionary account which relativizes logical possibility to epistemic considerations—although I am in sympathy with the implication (1970, 246) that the incorporation of certain indexical elements in logical possibility claims is illegitimate. His key arguments are unsound: e.g., he fails (1969, 41; 1970, 248-249) to respect the distinction (e.g., A.R. White (1975, 84)) between *necessitas consequentiae* and *necessitas consequentis*. To his discredit, Rasmussen (1977, 119-120; 1983, 537-538) uncritically accepts some of Machan's misguided suggestions.

modalities *de re* was very apparent in the writings of many of those, including some of the most prominent, who adopted essentialist views. This was due to a lack of rigour concerning the observance of the *de re*/*de dicto* distinction and attendant matters.

The cogent essentialist, however, observes the *de re*/*de dicto* distinction, and the distinction between logical modalities and metaphysical modalities *de re*. The cogent essentialist, in addition, is well-placed to preserve and respect the core notions of logical possibility and necessity. This is a great advantage if the logical modalities are, as McFetridge has suggested, and I have agreed, crucial to the whole practice of reasoning from suppositions.

Opponents of classical empiricism, such as Kant[84] and Hegel,[85] distinguished between merely logical possibility and real possibility, observing that logical possibility is, in Hegelian terms, an abstraction from the ontological process, rather than a feature thereof.[86] So grand, and so derided, a metaphysician

---

[84] *Critique of Pure Reason* [1781/1787](1933), A223/B270, A244/B302, A596/B624 n., cf. A220/B268. Kant, perhaps as an implicit rejoinder to Hume, repeatedly emphasizes that logical possibility is necessary but not sufficient for possibility in existence. As Körner (1955, 89-90) and Walsh (1975, 148) indicate, Kant's 'Postulates of Empirical Thought' (A218/B265-266) employ objective non-logical modalities. Kant (A227/B279) writes that 'the third postulate...concerns material necessity in existence, and not merely formal and logical necessity in the connection of concepts'.

[85] *The Science of Logic*, Bk II, Pt 3, Ch. 2, 'Actuality' [1812-16](1969, 541-553). Useful comment occurs in Burbidge (1992, 39-51), Harris (1983, 189-212), Houlgate (1995), Johnson (1988, 142-145) and Mure (1950, 132-143). Hegel provides a threefold classification of modality: formal, real and absolute. Both real and (Hegelian) absolute necessity are, by my lights, notions of metaphysical modality *de re*. Real necessity is an aspect of the contingently actual: what contingently is renders many formal possibilities *merely* formal, i.e., it precludes their actualization. All possibility exists for Hegel, but some as '*only* possibility' [1812-16](1969, 544), i.e., only as 'present to thought' (Burbidge (1992, 41)). Absolute necessity, 'the determination of the parts by the principle of organization of the whole' (Harris (1983, 207)), is the teleological dynamic of actuality the end of which, for Hegel, is freedom. (This unity of necessity and freedom compares with the Aristotelian conception of the human *ergon* as *proairesis*, an account of which is provided by Clark (1975, esp. 21-29).)

[86] Harris (1983, 193) comments:

> The logically possible...is an extremely thin and rather futile conception. Everything, as Hegel points out, is logically possible so long as one abstracts from all conditions of actuality....a hippogryph is logically possible only if we abstract from physiology. Physiologically a horse with the torso of a man in place of its neck and with a human head is altogether impossible and is actually self-contradictory.

The point is, however, that Hegel's notion of formal possibility intrinsically involves abstraction from actuality: 'In the sense of this formal possibility *everything is possible that is not self-contradictory*' (Hegel [1812-16](1969, 543)). The very notion introduces the abstraction, without need for any further act of abstraction. Cf. Burbidge's comment (1992, 43) that the formal modalities are 'independent of content'.

as Hegel was opposed to the conflation of logical possibility and real possibility; yet those who sought to eliminate metaphysics were blinded to a distinction which, in comparison with many aspects of the apparatus of modern philosophy, is far from being sophisticated or obscure. It is ironic, given their insistence that there are no modalities in nature, that it is empiricists who have been guilty of obscuring the distinction. Real possibility cannot easily be forsaken, as is evidenced by the inappropriate role in which empiricists have sought to cast logical possibility, as a surrogate for the former notion. The irony is all the more pronounced in the case of a philosophy which called itself 'logical'. It is unfortunate that the conflation has been perpetuated by neo-essentialists still under the spell of empiricism, since it is detrimental to metaphysics and the philosophy of logic and it obstructs the path to a sound modal epistemology, especially for modality *de re*.

Bibliography

Note

This bibliography lists works cited. The original details of articles which have appeared in more than one publication and of classic works are given between square brackets.

Adams, R.M. (1974) 'Theories of Actuality', *Noûs*, 8: 211-231.
Angelelli, I. (1967) *Studies on Gottlob Frege and Traditional Philosophy* (Dordrecht: Reidel).
Anscombe, G.E.M. (1953) 'The Principle of Individuation', *Proceedings of the Aristotelian Society*, Supp. 27: 83-96.
Appiah, A. (1985) 'Verificationism and the Manifestations of Meaning', *Proceedings of the Aristotelian Society*, Supp. 49: 17-31.
Aristotle (1984) *The Complete Works of Aristotle*, ed. by J. Barnes (Princeton, New Jersey: Princeton University Press).
Armstrong, D.M. (1986) 'The Nature of Possibility', *Canadian Journal of Philosophy*, 16: 575-594.
Armstrong, D.M. (1989) *A Combinatorial Theory of Possibility* (Cambridge: Cambridge University Press).
Ayer, A.J. (1946) *Language, Truth and Logic* (2nd edn, London: Gollancz).
Ayer, A.J. (ed.)(1959) *Logical Positivism* (Glencoe, Illinois: Free Press).
Ayer, A.J. (1959a) introduction to the above: 3-28.
Ayer, A.J. [1937](1959b) 'Verificationism and Experience' [*Proceedings of the Aristotelian Society*, 37], in Ayer (ed.)(1959): 228-243
Ayer, A.J. (1969) *Metaphysics and Common Sense* (London: Macmillan).
Ayer, A.J. (1973) *The Central Questions of Philosophy* (London: Weidenfeld and Nicolson).
Ayer, A.J. (1976) 'Identity and Reference', in Kasher (ed.)(1976): 3-24.
Ayer, A.J. (1979) 'Replies', in Macdonald (ed.)(1979): 277-333.
Ayer, A.J. (1980) *Hume* (Oxford: Oxford University Press).
Ayer, A.J. (1985) *Wittgenstein* (London: Weidenfeld and Nicolson).
Ayer, A.J. (1991) 'A Defence of Empiricism', in A. P. Griffiths (ed.)(1991): 1-16.
Ayer, A.J. (1992) 'Reply to Michael Dummett', in Hahn (ed.)(1992): 149-156.
Ayers, M.R. (1968) *The Refutation of Determinism* (London: Methuen).
Ayers, M.R. (1974) 'Individuals Without Sortals', *Canadian Journal of Philosophy*, 4: 113-148.
Bacon, J. (1981) 'Purely Physical Modalities', *Theoria*, 47: 134-141.
Bacon, J. (1995) *Universals and Property Instances* (Oxford: Blackwell).

Benardete, J.A. (1962) 'Is There a Problem About Logical Possibility?', *Mind*, 71: 342-353.

Bennett, D. (1969) 'Essential Properties', *Journal of Philosophy*, 66: 487-499.

Bennett, J. (1961) 'On Being Forced to a Conclusion', *Proceedings of the Aristotelian Society*, Supp. 35: 15-34.

Berlin, I. (1939) 'Verification', *Proceedings of the Aristotelian Society*, 39: 225-248.

Blackburn, S. (1984) *Spreading The Word: Groundings in the Philosophy of Language* (Oxford: Oxford University Press).

Blackburn, S. (1986) 'Morals and Modals', in Macdonald and Wright (eds)(1986): 119-141.

Blackburn, S. (1988) 'Attitudes and Contents', *Ethics*, 98: 501-517.

Blackburn, S. (1993) 'Realism, Quasi, or Queasy?', in Haldane and Wright (eds)(1993): 365-383.

Boeselager, W.F. (1975) *The Soviet Critique of Neopositivism*, trans. by T.J. Blakely (Dordrecht: Reidel).

Bolton, R. (1976) 'Essentialism and Semantic Theory in Aristotle: *Posterior Analytics*, II, 7-10', *Philosophical Review*, 85: 514-544.

Bradley, R. (1992) *The Nature of All Being: A Study of Wittgenstein's Modal Atomism* (Oxford: Oxford University Press).

Bradley, R. and Swartz, N. (1979) *Possible Worlds: An Introduction to Logic and Its Philosophy* (Oxford: Blackwell).

Brody, B.A. (1973) 'Why Settle For Anything Less Than Good Old-Fashioned Aristotelian Essentialism', *Noûs*, 7: 351-365.

Brody, B.A. (1980) *Identity and Essence* (Princeton, New Jersey: Princeton University Press).

Burbidge, J.W. (1992) *Hegel on Logic and Religion* (Albany, New York: State University of New York Press).

Burge, T. (1977) 'Belief *De Re*', *Journal of Philosophy*, 74: 338-362.

Burgess, J.P. (1996) 'Marcus, Kripke, and Names', *Philosophical Studies*, 84: 1-47.

Burnheim, J. (1952) 'The Modern Attack on Metaphysics: Russell and Ayer', *Philosophical Studies* (Eire), 2: 3-17.

Butchvarov, P. (1970) *The Concept of Knowledge* (Evanston, Illinois: Northwestern University Press).

Carnap, R. [1930](1959b) 'The Old and the New Logic' [originally 'Die alte und die neue Logik', *Erkenntnis*, 1: 12-26], trans. by I. Levi, in Ayer (ed.)(1959): 133-146.

Carnap, R. [1932](1959a) 'The Elimination of Metaphysics Through Logical Analysis of Language' [originally 'Überwindung der Metaphysik durch Logische Analyse der Sprache', *Erkenntnis*, 2: 219-241], trans. by A. Pap, in Ayer (ed.)(1959): 60-81.

Carnap, R. [1934](1992) 'On the Character of Philosophical Problems' [*Philosophy of Science*, 1: 5-19], trans. by W.M. Malisoff, in R. Rorty

(ed.)(1992) *The Linguistic Turn: Essays in Philosophical Method* (2nd edn, London: University of Chicago Press): 54-62.

Carnap, R. [1934](1937a) *The Logical Syntax of Language* [originally *Logische Syntax der Sprache* (Vienna, Springer)], trans. by A. Smeaton (London: Kegan Paul).

Carnap, R. (1936) 'Testability and Meaning' (Pt 1), *Philosophy of Science*, 3: 419-471.

Carnap, R. (1937b) 'Testability and Meaning' (Pt 2), *Philosophy of Science*, 4: 1-40.

Cartwright, R. (1968) 'Some Remarks on Essentialism', *Journal of Philosophy*, 65: 615-626.

Casullo, A. (1977) 'Kripke on the A Priori and the Necessary', *Analysis*, 37: 152-159.

Casullo, A. (1992) 'Analyticity and the *A Priori*', in P. Hanson, and B. Hunter (eds)(1992) *Return of the A Priori* (*Canadian Journal of Philosophy*, Supp. 18, Calgary, Alberta: Calgary University Press): 113-150.

Chomsky, N. (1965) *Aspects of the Theory of Syntax* (Cambridge, Massachusetts: MIT Press).

Church, A. (1949) review of Ayer (1946), *Journal of Symbolic Logic*, 14: 52-53.

Clark, S.R.L. (1975) *Aristotle's Man* (Oxford: Oxford University Press).

Cohen, L.J. (1980) 'Is a Criterion of Verifiability Possible?', *Midwest Studies in Philosophy*, 5: 347-352.

Cohen, S.M. (1978) 'Essentialism in Aristotle', *Review of Metaphysics*, 31: 387-405.

Cole, R. (1963) 'On the Impossibility of Metaphysics', *Philosophical Studies*, 14: 43-48.

Collins, A.W. (1967) 'Philosophical Imagination', *American Philosophical Quarterly*, 4: 49-56.

Cook, J.W. (1994) *Wittgenstein's Metaphysics* (Cambridge: Cambridge University Press).

Dancy, J. (1985) *An Introduction to Contemporary Epistemology* (Oxford: Blackwell).

Davies, M. (1981) *Meaning, Quantification, Necessity* (London: Routledge).

Davies, M. and Humberstone, L. (1980) 'Two Notions of Necessity', *Philosophical Studies*, 38: 1-30.

Della Rocca, M. (1996a) 'Essentialism', *Philosophical Books*, 37: 1-13; 81-89.

Della Rocca, M. (1996b) 'Essentialists and Essentialism', *Journal of Philosophy*, 93: 186-202.

Divers, J. (1990) 'Three Conceptions of Modal Realism' (unpublished doctoral thesis, University of Glasgow).

Divers, J. (1992) 'Modal Supervenience and Modal Realism', *Theoria*, 58: 99-115.

Divers, J. (1997) 'The Analysis of Possibility and the Possibility of Analysis', *Proceedings of the Aristotelian Society*, 97: 141-160.

Divers, J. (1999) 'A Genuine Realist Theory of Advanced Modalising', *Mind*, 108:

217-239.

Dummett, M. [1959] 'Wittgenstein's Philosophy of Mathematics', *Philosophical Review*, 68: 324-348, repr. in Dummett (1978): 166-185.

Dummett, M. [1967] 'Frege's Philosophy', originally in P. Edwards (ed.), *An Encyclopedia of Philosophy* (New York): 225-227, repr. in Dummett (1978): 87-115.

Dummett, M. (1973) *Frege: Philosophy of Language* (London: Duckworth).

Dummett, M. (1976) 'What is a Theory of Meaning?' (II), in Evans and McDowell (eds)(1976): 67-137.

Dummett, M. (1978) *Truth and Other Enigmas* (London: Duckworth).

Dummett, M. (1992) 'The Metaphysics of Verificationism', in Hahn (ed.)(1992): 129-148.

Edgington, D. (1985) 'Verificationism and the Manifestations of Meaning', *Proceedings of the Aristotelian Society*, Supp. 49: 33-52.

Evans, G. and McDowell, J. (eds)(1976) *Truth and Meaning: Essays in Semantics* (Oxford: Oxford University Press).

Fann, K.T. (1969) *Wittgenstein's Conception of Philosophy* (Oxford: Blackwell).

Farrell, R. (1981) 'Metaphysical Necessity is Not Logical Necessity', *Philosophical Studies*, 39: 141-153.

Feigl, H. and Sellars, W. (eds)(1949) *Readings in Philosophical Analysis* (New York: Appleton-Century-Crofts).

Fine, K. (1994) 'Essence and Modality', *Philosophical Perspectives*, 8: 1-16.

Fine, K. (1995) 'Ontological Dependence', *Proceedings of the Aristotelian Society*, 95: 269-290.

Fisk, M. (1973) *Nature and Necessity* (London: Indiana University Press).

Flew, A. (1991) *Thinking About Social Thinking* (London: Harper Collins).

Forbes, G. (1985) *The Metaphysics of Modality* (Oxford: Oxford University Press).

Forbes, G. (1986) 'In Defense of Absolute Essentialism', *Midwest Studies in Philosophy*, 11: 3-31.

Forbes, G. (1997) 'Essentialism', in Hale and Wright (eds)(1997): 515-533.

Foster, J. (1985) *Ayer* (London: Routledge and Kegan Paul).

Frege, G. [1879] *Begriffsschrift*, repr. in Frege (1980): 1-20.

Frege, G. [1892a] 'On Concept and Object', repr. in Frege (1980): 42-55.

Frege, G. [1892b] 'On Sense and Meaning', repr. in Frege (1980): 56-78.

Frege, G. (1980) *Translations from the Philosophical Works of Gottlob Frege*, ed. by P.T. Geach and M. Black (3rd edn, Oxford: Blackwell).

Fumerton, R.A. (1986) 'Essential Properties and *De Re* Necessity', *Midwest Studies in Philosophy*, 11: 281-294.

Geach, P.T. (1969) *God and the Soul* (London: Routledge and Kegan Paul).

Geach, P.T. (1972) *Logic Matters* (Oxford: Blackwell).

Gibbard, A. (1975) 'Contingent Identity', *Journal of Philosophical Logic*, 4: 187-221.

Gomberg, P. (1978) 'Does Possible Ever Mean "Logically Possible"?',

Philosophia (Israel), 8: 389-403.

Grice, H.P. and Strawson, P.F. (1956) 'In Defense of a Dogma', *Philosophical Review*, 65: 141-158.

Griffiths, A.P. (ed.)(1991) *A.J. Ayer: Memorial Essays* (Cambridge: Cambridge University Press).

Grossmann, R. (1983) *The Categorial Structure of the World* (Bloomington, Indiana: Indiana University Press).

Grossmann, R. (1992) *The Existence of the World* (London: Routledge).

Guttenplan, S. (ed.)(1975) *Mind and Language* (Oxford: Oxford University Press).

Haack, S. (1978) *Philosophy of Logics* (Cambridge: Cambridge University Press).

Hacking, I. (1967) 'Possibility', *Philosophical Review*, 76: 143-168.

Hacking, I. (1972) 'Individual Substance', in H. Frankfurt (ed.)(1972) *Leibniz: A Collection of Critical Essays* (New York: Doubleday): 137-153.

Hacking, I. (1975) 'All Kinds of Possibility', *Philosophical Review*, 84: 321-337.

Haldane, J. and Wright, C. (eds)(1993) *Reality, Representation and Projection* (Oxford: Oxford University Press).

Hale, B. (1986) 'The Compleat Projectivist', *Philosophical Quarterly*, 36: 65-84.

Hale, B. (1993a) 'Can There Be a Logic of Attitudes?', in Haldane and Wright (eds)(1993): 337-363.

Hale, B. (1993b) 'Postscript', in Haldane and Wright (eds)(1993): 385-388.

Hale, B. (1996) 'Absolute Necessities', *Philosophical Perspectives*, 10: 93-117.

Hale, B. (1997) 'Modality', in Hale and Wright (eds)(1997): 487-514.

Hale, B. and Wright, C. (eds)(1997) *A Companion to the Philosophy of Language* (Oxford: Blackwell).

Hale, B. (1999) 'On Some Arguments for the Necessity of Necessity', *Mind*, 108: 23-52.

Hallett, G.L. (1991) *Essentialism: A Wittgensteinian Critique* (New York: State University of New York Press).

Hanfling, O. (1981) *Logical Positivism* (Oxford: Blackwell).

Hanson, N.R. (1960) 'On the Impossibility of Any Future Metaphysics', *Philosophical Studies*, 11: 86-96.

Harré, R. and Madden, E.H. (1975) *Causal Powers* (Oxford: Blackwell).

Harris, E.E. (1983) *An Interpretation of the Logic of Hegel* (London: University Press of America).

Hazen, A. (1979) 'Counterpart-Theoretic Semantics for Modal Logic', *Journal of Philosophy*, 76: 319-338.

Hegel, G.W.F. [1812-16](1969) *The Science of Logic*, trans. by A.V. Miller (London: Allen and Unwin).

Heidegger, M. [1927](1962a) *Being and Time*, trans. by J. Macquarrie and E. Robinson (Oxford: Blackwell).

Heidegger, M. [1929](1962b) *Kant and the Problem of Metaphysics*, trans. by J.S. Churchill (Bloomington, Indiana: Indiana University Press).

Hempel, C.G. [1945](1949) 'On the Nature of Mathematical Truth' [*American Mathematical Monthly*, 4], in Feigl and Sellars (eds)(1949): 222-237.

Hempel, C.G. [1950](1959) 'Problems and Changes in the Empiricist Criterion of Meaning' [*Revue Internationale de Philosophie*, 4: 41-63], repr. With appendix in Ayer (ed.)(1959): 108-129.

Hempel, C.G. (1965) *Aspects of Scientific Explanation and Other Essays in the Philosophy of Science* (New York: Free Press).

Hirsch, E. (1982) *The Concept of Identity* (Oxford: Oxford University Press).

Hirsch, E. (1986) 'Metaphysical Necessity and Conceptual Truth', *Midwest Studies in Philosophy*, 11: 243-256.

Hochberg, H. (1971) 'Facts, Possibilities and Essences in the *Tractatus*', in Klemke (ed.)(1971): 485-533.

Hodges, W. (1977) *Logic* (London: Penguin).

Hoffman, J. and Rosenkrantz, G.S. (1994) *Substance Among Other Categories* (Cambridge: Cambridge University Press).

Honderich, T. (1991) 'An Interview With A.J. Ayer', in A. P. Griffiths (ed.)(1991): 209-226.

Hookway, C. (1988) *Quine: Language, Experience and Reality* (Cambridge: Polity Press).

Hospers, J. (1967) *An Introduction to Philosophical Analysis* (2nd edn, Englewood Cliffs, New Jersey: Prentice Hall).

Houlgate, S. (1995) 'Necessity and Contingency in Hegel's *Science of Logic*', *Owl of Minerva*, 27: 337-49.

Hughes, G.E. and Cresswell, M.J. (1996) *A New Introduction to Modal Logic* (London: Routledge).

Hume, D. [1739-40](1978) *A Treatise of Human Nature*, ed. by L.A. Selby-Bigge, 2nd edn rev. by P.H. Nidditch (Oxford: Oxford University Press).

Hume, D. [1740](1938) *An Abstract of a Treatise of Human Nature*, repr. with an introduction by J.M. Keynes and P. Sraffa (Cambridge: Cambridge University Press).

Hume, D. [1748](1975) *An Enquiry Concerning Human Understanding*, in *Enquiries Concerning Human Understanding and Concerning the Principles of Morals* [1772], ed. by L.A. Selby-Bigge, 3rd edn rev. by P.H. Nidditch (Oxford: Oxford University Press).

Hymers, M. (1996) 'Internal Relations and Analyticity: Wittgenstein and Quine', *Canadian Journal of Philosophy*, 26: 591-612.

Ishiguro, Hidé (1972) *Leibniz's Philosophy of Logic and Language* (London: Duckworth).

Jacob, P. (1987) 'Is There a Path Half-Way Between Realism and Verificationism?', *Synthese*, 73: 531-547.

Joergensen, J. (1951) *The Development of Logical Empiricism* (Chicago: University of Chicago Press).

Johnson, P.O. (1988) *The Critique of Thought: A Re-examination of Hegel's* Science of Logic (Aldershot: Avebury).

Jubien, M. (1993) *Ontology, Modality and the Fallacy of Reference* (Cambridge: Cambridge University Press).

Kahl, S.A. (1986) 'Wittgenstein, Ordinary Language and the Critique of Language', in Leinfellner and Wuketits (eds)(1986): 297-300.

Kant, I. [1781/1787](1933) *Critique of Pure Reason*, trans. by N.K. Smith (2nd impression, with corrections, London: Macmillan).

Kenny, A.J.P. (1989) *The Metaphysics of Mind* (Oxford: Oxford University Press).

Kim, J. (1986) 'Possible Worlds and Armstrong's Combinatorialism', *Canadian Journal of Philosophy*, 16: 595-612.

Kirwan, C. (1971) 'How Strong Are the Objections to Essence?', *Proceedings of the Aristotelian Society*, 71: 43-59.

Kitcher, P. (1980) 'Apriority and Necessity', *Australasian Journal of Philosophy*, 58: 89-101.

Kitcher, P. (1984) *The Nature of Mathematical Knowledge* (Oxford: Oxford University Press).

Klemke, E.D. (ed.)(1971) *Essays on Wittgenstein* (London: University of Illinois Press).

Klemke, E.D. (1971a) 'The Ontology of Wittgenstein's *Tractatus*', in Klemke (ed.)(1971): 104-119.

Kneale, W. (1962) 'Modality *De Dicto* and *De Re*', in E. Nagel, P. Suppes and A. Tarski (eds)(1962) *Logic, Methodology and Philosophy of Science* (Stanford, California: Stanford University Press): 622-633.

Körner, S. (1955) *Kant* (Harmonsworth: Penguin).

Körner, S. (1979) 'Ayer on Metaphysics', in Macdonald (ed.)(1979): 262-276.

Körner, S. (1991) 'On the Relation Between Commonsense, Science and Metaphysics', in A. P. Griffiths (ed.)(1991): 89-104.

Kripke, S.A. [1971](1977) 'Identity and Necessity' [originally in M.K. Munitz (ed.)(1971) *Identity and Individuation* (New York: New York University Press): 135-164], repr. in S.P. Schwartz (ed.)(1977) *Naming, Necessity and Natural Kinds* (London: Ithaca University Press): 66-101.

Kripke, S.A. (1980) *Naming and Necessity* (Oxford: Blackwell).

Kung, J. (1977) 'Aristotle on Essence and Explanation', *Philosophical Studies*, 31: 361-383.

Lamprecht, S.P. [1961] 'Metaphysics and Empiricism', in G.E. Myers (ed.), *Self, Religion and Metaphysics* (New York: Macmillan), repr. in Lamprecht (1967): 100-111.

Lamprecht, S.P. (1967) *The Metaphysics of Naturalism* (New York: Appleton-Century-Crofts).

Lehrer, K. (1962) 'A Note on the Impossibility of Any Future Metaphysics', *Philosophical Studies*, 13: 49-51.

Leibniz, G.W. (1973) *Philosophical Writings*, ed. by G.H.R. Parkinson, trans. by M. Morris and G.H.R. Parkinson (London: Dent).

Leibniz, G.W. (1996)[originally published (posthumously) in 1765] *New Essays on Human Understanding*, ed. and trans. by P. Remnant and J. Bennett (2nd edn, Cambridge: Cambridge University Press).

Leinfellner, W. and Wuketits, F.W. (eds)(1986) *The Tasks of Contemporary*

Philosophy, *Volume I* (Vienna: Hölder-Pichler-Tempsky).

Lewis, C.I. (1934) 'Experience and Meaning', *Philosophical Review*, 43: 125-146.

Lewis, D.K. [1968] 'Counterpart Theory and Quantified Modal Logic', *Journal of Philosophy*, 65: 113-126, repr. in Lewis (1983): 26-46.

Lewis, D.K. (1973) *Counterfactuals* (Oxford: Blackwell).

Lewis, D.K. (1983) *Philosophical Papers, Volume I* (Oxford: Oxford University Press).

Lewis, D.K. (1986) *On the Plurality of Worlds* (Oxford: Blackwell).

Loux, M.J. (ed.)(1979) *The Possible and the Actual* (London: Cornell University Press).

Loux, M.J. (1979a) 'Introduction: Modality and Metaphysics', in Loux (ed.)(1979): 15-64.

Lowe, E.J. (1989) *Kinds of Being: A Study of Individuation, Identity and the Logic of Sortal Terms* (Oxford: Blackwell).

Lowe, E.J. (1994a) 'Ontological Dependency', *Philosophical Papers*, 23: 31-48.

Lowe, E.J. (1994b) 'Primitive Substances', *Philosophy and Phenomenological Research*, 54: 531-552.

Lowe, E.J. (1995) 'The Metaphysics of Abstract Objects', *Journal of Philosophy*, 92: 509-524.

Lycan, W.G. (1988) review of Lewis (1986), *Journal of Philosophy*, 85: 42-47.

Lycan, W.G. (1991a) 'Two—No, Three—Concepts of Possible Worlds', *Proceedings of the Aristotelian Society*, 91: 215-227.

Lycan, W.G. (1991b) 'Pot Bites Kettle: A Reply to Miller', *Australasian Journal of Philosophy*, 69: 212-213.

Lycan, W.G. and Shapiro, S. (1986) 'Actuality and Essence', *Midwest Studies in Philosophy*, 11: 343-377.

Machan, T.R. (1969) 'A Note on Conceivability and Logical Possibility', *Kinesis,* 2: 39-42.

Machan, T.R. (1970) 'Another Look at "Logical Possibility"', *Personalist*, 51: 246-249.

Mackie, J.L. (1977) *Ethics: Inventing Right and Wrong* (London: Penguin).

Mackie, P. (1994) 'Sortal Concepts and Essential Properties', *Philosophical Quarterly*, 44: 311-333.

Marcus, R.B. [1961] 'Modalities and Intensional Languages', *Synthese*, 13: 303-322, repr. with corrections in Marcus (1993): 3-23.

Marcus, R.B. [1971] 'Essential Attribution', *Journal of Philosophy*, 68: 187-202, repr. with important corrections and omitted material in Marcus (1993): 53-70.

Marcus, R.B. [1990] 'A Backward Look at Quine's Animadversions on Modalities', in R. Barrett. and R. Gibson. (eds)(1990) *Perspectives on Quine* (Oxford: Blackwell): 230-243, repr. in Marcus (1993): 215-232.

Marcus, R.B. (1993) *Modalities: Philosophical Essays* (New York: Oxford University Press).

Martin, C. (1988) *The Philosophy of Thomas Aquinas* (London: Routledge).

Martin, R.M. (1987) *The Meaning of Language* (Cambridge, Massachusetts: MIT Press).

Mason, R.V. (1988) 'Logical Possibility', *Metaphilosophy*, 19: 11-24.

Matthews, G.B. (1990) 'Aristotelian Essentialism', *Philosophy and Phenomenological Research*, 50 (supplement): 251-262.

Meikle, S. (1995) *Aristotle's Economic Thought* (Oxford: Oxford University Press).

Miller, R.B. (1989) 'Dog Bites Man: A Defence of Modal Realism', *Australasian Journal of Philosophy*, 67: 476-478.

Miller, R.B. (1993) 'Genuine Modal Realism: Still the Only Non-Circular Game in Town', *Australasian Journal of Philosophy*, 71: 159-160.

Millican, P. (1993) 'Statements and Modality: Strawson, Quine and Wolfram', *International Journal of Moral and Social Studies*, 8: 315-326.

Misak, C.J. (1995) *Verificationism: Its History and Prospects* (London: Routledge).

Mondadori, F. (1995) 'Referential Opacity', in P. Leonardi and M. Santambrogio (eds)(1995) *On Quine: New Essays* (Cambridge: Cambridge University Press): 229-250.

Mondadori, F. and Morton, A. (1976) 'Modal Realism: The Poisoned Pawn', *Philosophical Review*, 85: 3-20.

Moore, E.C. (1951) 'Positivism and Potentiality', *Journal of Philosophy*, 48: 472-79.

Moore, G.E. (1962) *Commonplace Book 1919-1953*, ed. by C. Lewy (London: Allen and Unwin).

Moravcsik, J.M. (1990) *Thought and Language* (London: Routledge).

Mounce, H.O. (1981) *Wittgenstein's* Tractatus*: An Introduction* (Oxford: Blackwell).

Mumford, S. (1994) 'Dispositions, Supervenience and Reduction', *Philosophical Quarterly*, 44: 419-438.

Mure, G.R.G (1950) *A Study of Hegel's Logic* (Oxford: Oxford University Press).

Macdonald, G.F. (ed.)(1979) *Perception and Identity: Essays Presented to A.J. Ayer with His Replies to Them* (London: Macmillan).

Macdonald, G.F. and Wright, C. (eds)(1986) *Fact, Science and Morality: Essays on A.J. Ayer's* Language, Truth and Logic (Oxford: Blackwell).

McFetridge, I. (1990) *Logical Necessity and Other Essays*, ed. by J. Haldane and R. Scruton (Oxford: Blackwell).

McGinn, C. (1976) '*A Priori* and *A Posteriori* Knowledge', *Proceedings of the Aristotelian Society*, 76: 195-208.

McGinn, C. (1981) 'Modal Reality', in R. Healey (ed.)(1981) *Reduction, Time and Reality* (Cambridge: Cambridge University Press): 143-187.

McMichael, A. (1986) 'The Epistemology of Essentialist Claims', *Midwest Studies in Philosophy*, 11: 33-52.

Naylor, M.B. (1986) 'A Note on David Lewis's Realism About Possible Worlds', *Analysis*, 46: 28-29.

Newman, A. (1992) *The Physical Basis of Predication* (Cambridge: Cambridge University Press).

Noonan, H. (1994) 'In Defence of the Letter of Modal Fictionalism', *Analysis*, 54: 133-139.

Pap, A. (1958) *Semantics and Necessary Truth* (New Haven: Yale University Press).

Passmore, J. (1952) *Hume's Intentions* (Cambridge: Cambridge University Press).

Peacocke, C. (1978) 'Necessity and Truth Theories', *Journal of Philosophical Logic*, 7: 473-500.

Peacocke, C. (1993) 'How are A Priori Truths Possible?', *European Journal of Philosophy*, 1: 175-199.

Peacocke, C. (1997) 'Metaphysical Necessity: Understanding, Truth and Epistemology', *Mind*, 106: 521-574.

Petrie, H.G. (1971) 'Science and Metaphysics: A Wittgensteinian Interpretation', in Klemke (ed.)(1971): 138-169.

Pitkin, H.F. (1972) *Wittgenstein and Justice* (London: University of California Press).

Plantinga, A. (1969) '*De Re et De Dicto*', *Noûs*, 3: 235-258.

Plantinga, A. (1970) 'World and Essence', *Philosophical Review*, 79: 461-492.

Plantinga, A. (1974) *The Nature of Necessity* (Oxford: Oxford University Press).

Plantinga, A. (1987) 'Two Concepts of Modality: Modal Realism and Modal Reductionism', *Philosophical Perspectives*, 1: 189-231.

Poser, H. (1988) 'The Failure of Logical Positivism to Cope With Problems of Modal Theory', in S. Knuuttila (ed.)(1988) *Modern Modalities: Studies of the History of Modal Theories From Medieval Nominalism to Logical Positivism* (Dordrecht: Kluwer): 311-328.

Post, J.F. (1991) *Metaphysics* (New York: Paragon).

Prior, A.N. and Fine, K. (1977) *Worlds, Times and Selves* (London: Duckworth).

Prior, E. (1985) *Dispositions* (Aberdeen: Aberdeen University Press).

Putnam, H. (1975) *Mind, Language and Reality: Philosophical Papers, Volume II* (Cambridge: Cambridge University Press).

Putnam, H. [1979] 'Analyticity and Apriority: Beyond Wittgenstein and Quine', *Midwest Studies in Philosophy*, 4, repr. in Putnam (1983): 115-138.

Putnam, H. [1982] 'Why There Isn't a Ready-Made World', *Synthese*, 51: 141-167, repr. in Putman (1983): 205-228.

Putnam, H. (1983) *Realism and Reason: Philosophical Papers, Volume III* (Cambridge: Cambridge University Press).

Putnam, H. (1990) *Realism with a Human Face*, ed. by J. Conant (London: Harvard University Press).

Quine, W.V.O. [1936] 'Truth by Convention', in O. Lee (ed.) *Philosophical Essays for A.N. Whitehead* (New York, Longmans), repr. in Feigl and Sellars (eds)(1949), and repr. in Quine (1966): 70-99.

Quine, W.V.O. [1953] 'Three Grades of Modal Involvement', *Proceedings of the XIth International Congress of Philosophy*, Vol. 14 (Amsterdam: North-

Holland), repr. in Quine (1966): 156-174.

Quine, W.V.O. (1960) *Word and Object* (Cambridge, Massachusetts: MIT Press).

Quine, W.V.O. (1966) *The Ways of Paradox and Other Essays* (New York: Random House).

Quine, W.V.O. (1969) *Ontological Relativity and Other Essays* (New York: Columbia University Press).

Quine, W.V.O. (1980) *From a Logical Point of View* (2nd edn, revised, Cambridge, Massachusetts: MIT Press).

Railton, P. and Rosen, G. (1995) 'Realism', in J. Dancy and E. Sosa (eds)(1995) *A Companion to Metaphysics* (Oxford: Blackwell): 433-437.

Rasmussen, D.B. (1977) 'Logical Possibility, Iron Bars, and Necessary Truth', *New Scholasticism*, 51: 117-122.

Rasmussen, D.B. (1983) 'Logical Possibility: An Aristotelian Essentialist Critique', *Thomist*, 47: 513-540.

Read, S. (1995) *Thinking About Logic* (Oxford: Oxford University Press).

Rescher, N. (1975) *A Theory of Possibility* (Oxford: Blackwell).

Rinaldi, F. (1967) 'Logical Possibility', *Philosophy and Phenomenological Research*, 28: 81-99.

Romanos, G.D. (1983) *Quine and Analytic Philosophy* (London: MIT Press).

Roper, A. (1982) 'Towards an Eliminative Reduction of Possible Worlds', *Philosophical Quarterly*, 32: 45-59.

Rosen, G. (1990) 'Modal Fictionalism', *Mind* 99: 327-354.

Russell, B. [1918] 'The Philosophy of Logical Atomism', repr. in Russell (1956): 177-281.

Russell, B. (1937a) *A Critical Exposition of the Philosophy of Leibniz* (2nd edn, London: Allen and Unwin).

Russell, B. (1937b) 'On Verification', *Proceedings of the Aristotelian Society*, 38: 1-20.

Russell, B. (1940) *An Inquiry into Meaning and Truth* (London: Allen and Unwin).

Russell, B. [1950] 'Logical Positivism', repr. in Russell (1956): 367-382.

Russell, B. (1956) *Logic and Knowledge: Essays 1901-1950*, ed. by R.C. Marsh (London: Allen and Unwin).

Ryle, G. (1959) 'Philosophical Arguments', in Ayer (ed.)(1959): 327-344.

Rynin, D. (1957) 'Vindication of L*G*C*L P*S*T*V*SM', *Proceedings and Addresses of the American Philosophical Association*, 30: 45-67.

Salmon, N. (1979) 'How *not* to Derive Essentialism from the Theory of Reference', *Journal of Philosophy*, 76: 703-725.

Schlick, M. [1932a] 'Is There a Factual *a Priori*?' ['Gibt es ein materiales Apriori?', *Wissenschaftlicher Jahresbericht der Philosophischen Gesellschaft an der Universität du Wien —Ortsgruppe Wien der Kant-Gesellschaft für das Vereinsjahr 1931/32* (Vienna, 1932: 55-65)], trans. W. Sellars, in Feigl and Sellars (eds)(1949): 277-285; repr. in Schlick (1979: 161-170).

Schlick, M. [1932b] 'Positivism and Realism' ['Positivismus und Realismus', *Erkenntnis*, 3: 1-31], trans. by D. Rynin, in Ayer (ed.)(1959): 82-107 [alternative trans. by P. Heath in Schlick (1979): 259-284].

Schlick, M. [1936] 'Meaning and Verification' [*Philosophical Review*, 45: 339-369], repr. in Schlick (1979: 456-481).

Schlick, M. [1938] 'Form and Content: An Introduction to Philosophical Thinking' [from M. Schlick, *Gesammelte Aufsätze 1926-1936* (Vienna: 151-249)] repr. and rev. in Schlick (1979: 285-369).

Schlick, M. (1979) *Philosophical Papers, Volume II (1925-1936)*, ed. by H.L. Mulder and B.F.B. van de Velde-Schlick (Dordrecht: Reidel).

Schueler, G.F. (1988) '*Modus Ponens* and Moral Realism', *Ethics*, 98: 492-500.

Seddon, G. (1972) 'Logical Possibility', *Mind*, 81: 481-494.

Shalkowski, S.A. (1994) 'The Ontological Ground of the Alethic Modality', *Philosophical Review*, 103: 669-688.

Shalkowski, S.A. (1996) 'Conventions, Cognitivism, and Necessity' *American Philosophical Quarterly*, 33: 375-392.

Sharlow, M.F. (1988) 'Lewis's Modal Realism: A Reply to Naylor', *Analysis*, 48: 13-15.

Sidelle, A. (1989) *Necessity, Essence and Individuation: A Defense of Conventionalism* (London: Cornell University Press).

Skyrms, B. 'Tractarian Nominalism', *Philosophical Studies*, 40: 199-206, repr. in Armstrong (1989): 145-152.

Slote, M.A. (1974) *Metaphysics and Essence* (Oxford: Blackwell).

Smith, N.K. (1905) 'The Naturalism of David Hume', *Mind*, 14: 149-173; 335-347.

Smith, N.K. (1941) *The Philosophy of David Hume* (London: Macmillan).

Sorabji, R. (1980) *Necessity, Cause and Blame: Perspectives on Aristotle's Theory* (London: Duckworth).

Sprigge, T. (1962) 'Internal and External Properties', *Mind*, 71: 197-212.

Stace, W.T. (1944) 'Positivism', *Mind*, 53: 215-237.

Stalnaker, R.C. (1976) 'Possible Worlds', *Noûs*, 10: 65-75.

Stalnaker, R.C. (1986) 'Counterparts and Identity', *Midwest Studies in Philosophy*, 11: 121-140.

Strawson, P.F. (1966) *The Bounds of Sense: An Essay on Kant's* Critique of Pure Reason (London: Methuen).

Stroud, B. [1965](1971) 'Wittgenstein and Logical Necessity' [*Philosophical Review*, 74: 504-418], repr. in Klemke (ed.)(1971): 447-463.

Stroud, B. (1977) *Hume* (London: Routledge).

Teller, P. (1975) 'Essential Properties: Some Problems and Conjectures', *Journal of Philosophy*, 72: 233-248.

Tichy, P. (1972) 'Plantinga on Essence: A Few Questions', *Philosophical Review*, 81: 82-93.

Toulmin, S.E. (1958) *The Uses of Argument* (Cambridge: Cambridge University Press).

Urmson, J.O. (1956) *Philosophical Analysis: Its Development Between the Two World Wars* (Oxford: Oxford University Press).

van Fraassen, B.C. (1977) 'The Only Necessity is Verbal Necessity', *Journal of Philosophy*, 74: 71-85.

van Fraassen, B.C. (1978) 'Essence and Existence', in N. Rescher (ed.)(1978) *Studies in Ontology* (Oxford: Blackwell): 1-25.

van Fraassen, B.C. (1980) *The Scientific Image* (Oxford: Oxford University Press).

van Inwagen, P. (1986) 'Two Concepts of Possible Worlds', *Midwest Studies in Philosophy*, 11: 185-213.

Walsh, W.H. (1975) *Kant's Criticism of Metaphysics* (Edinburgh: Edinburgh University Press).

Warnock, G.J. (1958) *English Philosophy Since 1900* (London: Oxford University Press).

Weinberg, J.R. (1936) *An Examination of Logical Positivism* (London: Kegan Paul).

Weiss, P. (1980) 'Possibility: Three Recent Ontologies', *International Philosophical Quarterly*, 20: 199-219.

Weissman, D. (1965) *Dispositional Properties* (Carbondale: Southern Illinois University Press).

White, A.R. (1975) *Modal Thinking* (Oxford: Blackwell).

White, A.R. (1987) *Methods of Metaphysics* (London: Croom Helm).

White, N.P. (1971) 'Aristotle on Sameness and Oneness', *Philosophical Review*, 80: 177-197.

White, N.P. (1986) 'Identity, Modal Individuation, and Matter in Aristotle', *Midwest Studies in Philosophy*, 11: 475-494.

Wiggins, D. (1974) 'Essentialism, Continuity, and Identity', *Synthese* 23: 321-359.

Wiggins, D. (1976) 'The *De Re* "Must": a Note on the Logical Form of Essentialist Claims', in Evans and McDowell (eds)(1974): 285-312.

Wiggins, D. (1979) 'Ayer on Monism, Pluralism and Essence', in Macdonald (ed.)(1979): 131-160.

Wiggins, D. (1980) *Sameness and Substance* (Oxford: Blackwell).

Williams, M. (1986) 'The Elimination of Metaphysics', in Macdonald and Wright (eds)(1986): 9-25.

Witt, C. (1989) *Substance and Essence in Aristotle* (London: Cornell University Press).

Wittgenstein, L. (1963) *Tractatus Logico-Philosophicus*, trans. by D.F. Pears and B.F. McGuiness (2nd impression, with corrections, London: Routledge and Kegan Paul).

Wittgenstein, L. (1967) *Philosophical Investigations*, trans. by G.E.M. Anscombe (3rd edn, Oxford: Blackwell).

Wittgenstein, L. (1978) *Remarks on the Foundations of Mathematics*, ed. by G.H. von Wright, R. Rhees and G.E.M. Anscombe, trans. by G.E.M. Anscombe (3rd edn, Oxford: Blackwell).

Wittgenstein, L. (1979) *Notebooks 1914-16*, ed. by G.H. von Wright and G.E.M.

Anscombe (2nd edn, Oxford: Blackwell).

Wittgenstein, L. (1981) *Zettel*, trans. by G.E.M. Anscombe, ed. by G.E.M. Anscombe and G.H. von Wright (2nd edn, Oxford: Blackwell).

Wolfram, S. (1975) 'Quine, Statements and "Necessarily True"', *Philosophical Quarterly*, 25: 230-246.

Wolfram, S. (1989) *Philosophical Logic* (London: Routledge).

Wright, C. (1980) *Wittgenstein on the Foundations of Mathematics* (London: Duckworth).

Wright, C. (1986) 'Inventing Logical Necessity', in J. Butterfield (ed.)(1986) *Language, Mind and Logic* (Cambridge: Cambridge University Press): 187-209.

Wright, C. (1988) 'Realism, Antirealism, Irrealism, Quasi-Realism', *Midwest Studies in Philosophy*, 11: 25-49.

Wright, C. (1989) 'Necessity, Caution and Scepticism', *Proceedings of the Aristotelian Society*, Supp. 63: 203-238.

Wright, C. (1992) *Truth and Objectivity* (London: Harvard University Press).

Yablo, S. (1992) review of Sidelle (1989), *Philosophical Review*, 101: 878-881.

Yagisawa, T. (1988) 'Beyond Possible Worlds', *Philosophical Studies*, 53: 175-204.

Young, W. (1986) 'Wittgenstein and the Future of Metaphysics', in Leinfellner and Wuketits (eds)(1986): 291-293.

Zabeeh, F. (1973) *Hume, Precursor of Modern Empiricism* (2nd edn, The Hague: Martinus Nijhoff).

Name Index

Subject Index