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KNOWLEDGE OF NECESSITY: LOGICAL POSITIVISM AND KRIPKEAN ESSENTIALISM

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ABSTRACT

By the lights of a central logical positivist thesis in modal epistemology, for every necessary truth that we know, we know it a priori and for every contingent truth that we know, we know it a posteriori. Kripke attacks on both flanks, arguing that we know necessary a posteriori truths and that we probably know contingent a priori truths. In a reflection of Kripke's confidence in his own arguments, the first of these Kripkean claims is far more widely accepted than the second. Contrary to received opinion, the paper argues, the considerations Kripke adduces concerning truths purported to be necessary a posteriori do not disprove the logical positivist thesis that necessary truth and a priori truth are co-extensive.

I. On Ayer's Logical Positivist Account of Modal Knowledge

On a logical positivist view in modal epistemology, necessary truth and a priori truth are held to be co-extensive: a truth is necessary if and only if it is a priori. If justice is to be done to the logical positivist view, this biconditional should not be interpreted until one is clear about what is meant by 'a priori' here. Ayer has it that a proposition is a priori if and only if it is analytic and that it is a priori if and only if it is a necessary truth.[1] It would be uncharitable to present, by way of objection, such examples as Goldbach's conjecture. In accordance with Ayer's views about the semantics for arithmetical statements, whatever truth-value Goldbach's conjecture has it has of necessity, yet we do not know its truth-value. Thus, we do not know a priori that Goldbach's conjecture is necessarily true and nor do we know a priori that Goldbach's conjecture is necessarily false. All we know a priori in respect of its modal status is that either Goldbach's conjecture is necessarily true or it is necessarily false. As Ayer remarks in relation to claims about entailment, the logical positivist view about modality does not entail that every necessary truth is known.[2] Thus, it does not entail that every necessary truth is in fact known a priori. Rather, the claim is just that for every necessary truth we know, we know it a priori.[3] Now, however, another objection arises;

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[1] A.J. Ayer, *Language, Truth and Logic* (2nd ed., London: Victor Gollancz, 1946), 16-8.

[2] *Ibid.,* 17-8.

[3] Ayer's remarks, which are explicitly anti-psychologistic, put the emphasis on how being a priori is a feature (albeit an epistemic, and therefore relational, feature) of a proposition rather than of our actual knowledge of it. We know that for every tautology, it is true. However, it's not the case that for every tautology, we know that it is true. There are tautologies which we do not know to be tautologies, since they have never been

an objection from cases of knowledge by testimony. Granting that that I can know that *p* on the basis of being told by an expert that *p* and granting that there are necessary truths of logic and arithmetic, I can know a necessary truth on the basis of being told that it is true. It appears, then, that I can have *a posteriori* knowledge of a necessary truth.

This latter objection, however, is also an uncharitable one. Both objections are dissolved by realising that being a priori and being a posteriori are themselves modal matters, not occurrent ones. When *p* is a necessary truth it is not how an agent happens to come to know that it is true that matters, but how *p* has to be known in order for it to be known in the agent's epistemic community. Let *p* be an a priori truth. *p* is not a

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entertained in thought and there are tautologies we never could entertain given the limits of our finite minds. Ayer remarks (*ibid.*, 18) that 'it is common ground that deductive reasoning may lead to conclusions which are new in the sense that one had not previously apprehended them'. He holds (*loc. cit.*) that whenever it is true that *p* entails *q*, this is an analytic, and thus tautologous, matter and that it is thereby a priori that *p* entails *q*. Ayer's comments suggest that it is a priori even if no-one has entertained it. Further 'a priori' and 'analytic' are, in Ayer's taxonomy, co-extensive terms (*ibid.*, 16). A priori propositions are necessary (*ibid.*, 17). This is not a suggestion that necessity is a mere mark of the a priori. Rather, it is a claim that a proposition is necessary if and only if it is a priori. Whether a proposition *p* is analytic, a tautology, a priori or necessary in no way depends on our actually knowing that *p*. Rather, it concerns how the proposition would have to be known if it were known at all. When Ayer affirms (*ibid.*, 72, cf. 85-6) that 'the truths of mathematics and logic appear to everyone to be necessary and certain' he cannot, in respect of certainty, be talking about all such truths, but only those which we believe.

priori in virtue of actually being known a priori, but because the only way in which it could be epistemically justified would involve its being known a priori. The status of *p* in respect of whether it is a priori or a posteriori depends not upon facts about the *transmission* of knowledge from one agent to another, but rather upon the nature of the process under which *p* originally *comes to be known*.[4] This epistemic status is a *genetic* matter: it concerns how it ever comes to be known that *p* rather than how, once *p* is known, it is *subsequently* known.

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[4] C. Hughes, *Kripke: Names, Necessity, and Identity* (Oxford: Oxford University Press, 2004), 88-9, canvasses various ways in which 'a proponent of the link between necessity and apriority' might make their case. These are: (i) by claiming that every necessary truth is (in fact) known a priori; (ii) by claiming that every known necessary truth is known a priori; (iii) by claiming that every knowable necessary truth is known a priori; (iv) by claiming that every known necessary truth is knowable a priori. None of these, however, captures the thesis I attribute to Ayer and with which I agree. This is that when *p* is a necessary truth, for it to be known that *p* it is a requirement that at the point of entry to the stock of our knowledge, *p* is known a priori by someone. This differs from Hughes's mooted approaches in that it is a genetic thesis about the epistemic community, not about individual agents. It also differs in that the modality is stronger than in (iii) or (iv). The objections to (i) and (ii) are ones with which, as we saw in the previous footnote, Ayer agreed – thus, neither (i) nor (ii) is contained in the logical positivist thesis. The objection to (iii)/(iv) is a common one: that some necessary truths, such as that Hesperus is Phosphorus, are not knowable (by us) a priori. The debate ought then to centre on whether such claims are really necessary truths at all: see section II in the main text.

On this account of the a priori/a posteriori distinction, we can more charitably adopt the standard claim that on the logical positivist view of modal knowledge, the terms 'necessary' and 'a priori' are co-extensive: they refer to one-and-the-same set of truths. 'Contingent' and 'a posteriori' refer to that set's complement among the truths. Agent-specific epistemic circumstances are irrelevant to the thesis in modal epistemology that Ayer was defending.

Kripke's alleged counter-examples to the thesis of co-extensiveness are of course purported cases of the contingent a priori and the necessary a posteriori. The contingent a priori has been subjected to sturdy –and perhaps decisive—challenge.[5] In the case of the necessary a posteriori, on the other hand, it is widely (albeit not universally) agreed that Kripke produces the goods. This article argues, however, that even friends of modality should not rush to swallow that particular Kripkean pill. Scrutiny of the purported necessary a posteriori reveals that it is as vulnerable to challenge. Some have posed the challenge that (some or all of) Kripke's so-called 'necessary a posteriori' truths are in fact a priori.[6] The challenge I present here is to their necessity.

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[5] For discussion, see S.S. Chakravarti, 'Kripke on Contingent A Priori Truths', *Notre Dame Journal of Formal Logic* 20 (1979), 773-6 and H. Geirsson, 'The Contingent *A Priori*: Kripke's Two Types of Examples', *Australasian Journal of Philosophy* 69 (1991), 195-205.

[6] See G.W. Fitch, 'Are there necessary a posteriori truths?', *Philosophical Studies* 30 (1976), 243-7; P. Tichý 'Kripke on Necessity A Posteriori', *Philosophical Studies* 43 (1983), 225-41; N.U. Salmon, *Frege's Puzzle* (Cambridge, Mass.: MIT Press, 1986); S. Soames, *Beyond Rigidity: The Unfinished Semantic Agenda of* Naming and Necessity (Oxford: Oxford University Press, 2002). On the position I defend here, Kripke's

II. Against Necessary A Posteriori Truth

The onus is on the Kripkean to provide a genuine example of a necessary a posteriori truth. The trouble is, in Kripke's work there may well be no such example and, if the way of thinking that motivates this scepticism holds water, it doesn't seem at all easy to produce a genuine Kripke-style example.[7] Of course, Kripke and many, perhaps most,

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purported cases of the necessary a posteriori emerge as in fact contingent and a posteriori. For Soames (*ibid.*, 235-40, 278-9), since names refer directly, an utterance of the sentence 'Peter Hempel is Carl Hempel' semantically expresses the necessary a priori proposition that Carl Hempel is Carl Hempel but may, in the context of utterance, be uttered so as to assert a proposition that contains descriptive content, is contingent and is a posteriori (*ibid.*, 237). While in harmony with Soames's conclusions about the relationships between alethic-modal status and epistemic status, on my account (if there are propositions at all) even the former proposition is contingent and a posteriori. Unlike the arguments of Fitch, Tichý, Salmon and Soames, the argument I advance aims to remain neutral about the existence of propositions. On that question, see S.A. Kripke *Naming and Necessity* (Oxford: Blackwell, 1980), 21 and G.W. Fitch 'On Kripke and Statements', *Midwest Studies in Philosophy* 28 (2004): 295-308.

[7] In Kripke's examples no iterated modalities are involved. J.A. Benardete, *Metaphysics: The Logical Approach* (Oxford: Oxford University Press, 1989), 153-4, indicates a simpler, non-Kripkean, argument for the necessary a posteriori. This argument does use iterated modality. From an empirical premise, p, we may infer, by possibility introduction, $\Diamond p$. But then, by the S5 principle that whatever is possible is necessarily possible, we get $\approx\Diamond p$. So if being a posteriori 'spreads' from premise to conclusion, as

of his readers are of the view that such examples abound. It can be argued, though, that Kripke's examples are not, in fact, examples of *necessary truths* at all. So, they are not examples of necessary a posteriori truths. Such a line of attack upon Kripke will be mounted here. The attack will be two-pronged. First, it will briefly be argued that the view that Kripkean 'necessary a posteriori truths' are really necessary a posteriori truths has unacceptable consequences. Second, a view I call 'de re modalism' will be defended. De re modalism both avoids the unacceptable consequences of (distinctively) Kripkean essentialism and provides independent reasons for denying that Kripkean 'necessary a posteriori truths' are necessary truths at all.

The sorts of claims Kripke takes to express necessary a posteriori truths include: (i) identity statements in which the terms are distinct but co-referential weakly rigid designators (e.g., the statements expressed by 'Hesperus is Phosphorous' and 'Water is H_2O'); (ii) 'theoretical identities' (e.g., the statement expressed by 'Heat is molecular motion.'); (iii) some statements about kind membership (e.g., the statement expressed by 'Cicero is human.'); (iv) some statements about material composition (e.g., about a certain lectern's being made of wood); (v) some statements about the material origins of an organism (e.g., about Queen Elizabeth II's having developed from a certain pair of gametes).

These statements concern objects which, it is held, exist contingently. Now let us suppose that the claims Kripke takes to be necessary a posteriori truths are indeed

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Kripke takes it to in his epistemology for a posteriori necessity, then it is a posteriori that $\approx\subset p$. I will not deal with Benardete's argument any further here. For the sake of caution, my defence of the claim that if p is necessary then p is *a priori* should be read as being restricted to cases in which p does not already contain a modal operator.

necessary a posteriori truths. Kripke's way of avoiding the undesirable result that such 'essentialist' truths require the necessary existence of their objects is to invoke 'weak necessity'. In respect of the necessity operant upon a necessary a posteriori truth, Kripke advises that we 'interpret necessity here weakly. We can count statements as necessary if whenever the objects mentioned therein exist, the statement would be true.'[8] Now Kripke is aware that this appears to cause a problem in respect of existential claims about supposedly contingently existing objects. For all *x*, if *x* exists then *x* exists. Thus, singular existentials appear to come out as weakly necessary. It is worth noting that this is entirely independent of questions about whether 'exists' is a predicate and whether existence is a property. It requires only that singular existentials are meaningful and truth-valued. (That they are both is uncontroversial among participants in debates about singular existentials, though Russell once denied their meaningfulness.) So, it seems, the commitment to contingent existence, the claim that weak necessity is to be invoked to save contingent existence and the claim that there are necessary a posteriori truths are not co-tenable.[9] Kripke's suggested way round this problem is to suggest that 'an exception must be made for existence itself'.[10] However, this appears to be an ad hoc manoeuvre.[11]

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[8] S.A. Kripke, 'Identity and Necessity' in M.K. Munitz (ed.) *Identity and Individuation* (New York: New York University Press, 1971), 135-64, 137.

[9] For further details, see my 'How to Reconcile Essence with Contingent Existence', *Ratio* 21 (2008).

[10] Kripke, 'Identity and Necessity', 86 nt 11.

[11] For a closely related objection, see K. Fine 'Essence and Modality', *Philosophical Perspectives* 8 (1994), 1-16, 7.

How can the essentialist reconcile claims of de re necessity about contingent beings with the very contingency of the existence of those beings? The view I call 'de re modalism' provides a pathway. [12] De re modalism is either analogous to or a variant of the view in the philosophy of modality known simply as 'modalism', which I will sometimes call 'standard modalism'. 'Modalism', writes one of its advocates, 'is the view that the fundamental modal idioms are the operators "possibly" ("$\subset$"), "necessarily" ("$\approx$") and "actually" ("A") and that other means of expressing modal notions are ultimately to be explained in terms of these three'. [13] On a standard modalist view of alethic modality, then, the modal operators are not reducible to quantifiers over possible worlds or otherwise reducible or eliminable. Rather, they are syntactically and semantically primitive. Their grammar is not captured by some other syntactic device, such as quantification, and nor are the semantic contents of the claims that use of the modal operators enables us to make.

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[12] The view I call 'de re modalism' is defended by D. Wiggins in 'The De Re "Must": a Note on the Logical Form of Essentialist Claims' in G. Evans and J. McDowell (eds) *Truth and Meaning: Essays in Semantics* (Oxford: Oxford University Press), 131-160 and in *Sameness and Substance* (Oxford: Blackwell, 1980). It is also defended by C. McGinn *Logical Properties* (Oxford: Oxford University Press, 2000), though there are differences between his position and that of Wiggins.

[13] G. Forbes, 'Melia on Modalism', *Philosophical Studies* 68 (1992), 57-63, 57). Cf. J. Melia, *Modality* (Chesham: Acumen, 2003), 81, a critic of modalism who writes that for the modalist the 'correct logical form of "It is possible that P" is simply $\subset$P....modal truth is not to be articulated or understood in terms of possible worlds or possibilia'. See Chapter 4 of Melia's *Modality* and the references there for further details on (standard) modalism.

Alongside the standard modalist, the de re modalist has it that modality de re is not analysable via quantification over worlds. Furthermore, for the de re modalist there are distinctively de re modal modifiers the functioning of which cannot be captured by any other syntactic device, including the modal operators used to express de dicto modal claims. The standard modalist takes it that natural-language modal meaning is expressible entirely by sentential modal operators. The boxes and diamonds are operators on open or closed sentences. For the de re modalist, however, de re modality is (at least normally) non-sentential and is not properly formalizable within standard modal logic. The de re modalist takes it that de re modal modifiers are not only embedded within a sentence, but rather that they do not function at all like the negation operator of predicate calculus. De re modal modifiers function *within* sentences rather than *upon* (open or closed) sentences. The grammatical and philosophical observations that motivate de re modalism are prior to and independent of the development of a formal language for de re modalism.[14] For example, the de re modalist points to the use, in natural language, of modal terms which appear to function in an objective, but *non-alethic*, manner. In this connection, Wiggins points to the natural language verbal forms '*x* can be *φ*', '*x* could be *φ*' and 'it is possible for *x* to be *φ*'.[15] When metaphysical necessity de re is taken to modify predicates and/or the copula, as against sentences, there is no work to do in reconciling the necessity of

[14] Such a language has been constructed: see e.g., Wiggins, 'The De Re "Must"'. My concerns, here, however, are not with formal language.

[15] D. Wiggins, *Sameness and Substance*, 107; *Sameness and Substance Renewed* (Cambridge: Cambridge University Press, 2001), 112.

Cicero's humanity with its being contingent that he exists.[16] We will consider this point again shortly.

In order to appreciate how different de re modalism is from orthodox views in the philosophy of modality, it is worth noting how much the de re modalist's account of the distinction between modality de dicto and modality de re differs from the account that is standard in modal logic and philosophy. This, in turn, promotes insight into why de re modalism threatens Kripke's claims about the existence of necessary truths known a posteriori. As standard, a formula or sentence is de re if it includes either a modal operator within the scope of a quantifier or a name within the scope of a modal operator and de dicto just in case it meets neither condition. The modal operators in question, namely '$\approx$', '$\not\subset$' and their natural language analogues such as 'It is necessary that' and 'It is possible that' govern open or closed sentences. The syntactic distinction between modality de dicto and modality de re is just about the syntactic contexts of sentential modal operators. For the de re modalist, on the other hand, the syntax of modality de re cannot (fully) be captured by appeal to such sentential operators. In natural language, there are de re modal idioms which, the de re modalist has it, are syntactically and semantically irreducible to sentences that employ among their modal resources only sentential modal operators. (Such idioms include the verbal forms mentioned by Wiggins and quoted above.)

As was alluded to earlier, de re modalism comes in two main varieties: it may be a refinement of standard modalism or it may be an analogue of it. In the former case, the de re modalist has it that de dicto modality is expressible by primitive (i.e., neither

[16] See Wiggins, 'The De Re "Must"'. For a related argument, see my 'How to Reconcile Essence with Contingent Existence'.

reducible nor eliminable) sentential modal operators but that de re modality (at least normally) isn't. In the latter case, the de re modalist may admit, reject or remain neutral about a possible worlds account of de dicto modal claims. So, while the de re modalist is free to agree with the standard modalist about the syntax and semantics for de dicto modality, the core tenet of de re modalism is logically independent of standard modalism. For example, one might hold that logical necessity is de dicto and reducible to quantification over logically possible worlds while also holding that de re modality is neither reducible to quantification over worlds nor expressible via the boxes and diamonds of standard modal logic.We can distinguish further between a strong and a weak version of de re modalism. The strong version once again demonstrates the logical independence of de re modalism from standard modalism, since strong de re modalism is inconsistent with standard modalism. By the lights of strong de re modalism, defended by Colin McGinn, all modal terms function (semantically) as non-sentential modifiers.[17] Modality de dicto is then seen as a subclass of modality de re and sentential modal operators are regarded as a convenient indulgence. On the weak version, defended by Wiggins,[18] it is held that at least some de re modal claims cannot properly be formalized via sentential modal operators. On the weak version, the question of whether modality de dicto is a species of modality de re is left open.

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[17] According to McGinn, *Logical Properties*, 80: 'Syntactically, we can…employ modal words as if they were sentence operators, functioning like negation in classical logic, but semantically they are copula modifiers always.'

[18] 'The De Re "Must"'.

Now let us deal with two questions. First, how does de re modalism leave room for contingent existents? Second, why does it threaten the Kripkean attack on the claim that a truth is necessary only if it is a priori?

De re modalism saves the contingent existence of concrete entities by the following means. First, it claims that necessary truth is truth in absolutely all possible worlds (if the possible worlds device is invoked at all). In other words, for an atomic sentence, such as 'Cicero is human' or '2 is even' to express a necessary truth, the object denoted by its subject term must be a necessary being. The necessary truths, however, are not co-extensive with the true statements of de re necessity. While it is (strictly speaking) false that it is necessary that Cicero is human, this does not preclude its being the case that Cicero is necessarily human. The modality involved in the latter is taken to be syntactically non-sentential and to instead operate either upon the predicate term or upon the copula. The de re modalist does not invoke weak necessity at all, since the de re modalist does not view true statements of de re necessity as necessary truths. So, the problem of reconciling essentialism with contingent existence does not arise for the de re modalist. De re modalism is not 'neat' in other respects, but messy. For example, de re modalism is totally at odds with standard modal logic and possible worlds semantics. This refutes neither: what it suggests is that either de re modalism is on the wrong track or that standard modal logic and possible worlds semantics cannot, in their current states of development, fully account for de re modality. The fact that our best-developed existing formal logics for modality either employ sentential modal operators

as their sole modal resources or are after the fashion of logics that do so should cut little philosophical ice.[19]

If de re modalism is defensible, then the Kripkean thesis that there are necessary a posteriori truths is at best under-argued and at worst wrong-footed. The widespread view that Kripke refuted the claim that all necessary truths are a priori is partly grounded on acceptance of his contention that certain statements of metaphysical necessity are necessary a posteriori truths. If (as the de re modalist claims) metaphysical necessity de re is non-sentential, however, then typical Kripkean necessities are not in fact necessary truths at all. Given that they are essentialist claims about contingently existing beings, at best they are true statements of de re necessity. (On a de re modalist view there can be necessary truths in which de re modality is embedded. These, however, will concern abstract entities or they will be inferential principles for reasoning with de re modal notions.) Thus, such Kripkean necessities might not provide genuine counter-examples to the claim that all necessary truths are a priori. Since Kripke intends his purported examples of necessary a posteriori truths to be de re necessities they must, on a de re modalist view, be re-parsed if, strictly speaking, they are to come out true. Let us dub those claims that Kripke takes to be de re necessary a posteriori truths 'Kripkean de re necessities' (KDRN). In order for the KDRN to threaten the claim that necessary truth and a priori truth are co-extensive, they must include among their number at least one which meets the following conditions.

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[19] Compare the observations of McGinn, *ibid.*, 75 nt4 and the analogy he draws with the case of negation.

Condition 1 It is genuinely a necessary truth: that is, *by de re modalist lights*, it is a true claim of de dicto necessity.[20]

Condition 2 It is not a priori (in the sense of 'a priori' set out at in section I).

By de re modalist lights, if typical KDRN are interpreted as purported necessary truths, they come out false. If, on the other hand, they are interpreted along de re modalist lines as, at best, contingently true statements of de re necessity, then, they also fail to meet Condition 1. Either way, they do not count as counter-examples to the logical empiricist view that necessity and a priority are co-extensive. In the appeal to necessity a posteriori, Kripke's threat is to a thesis weaker than co-extensiveness but a necessary condition for it, namely that a truth is necessary only if it is a priori. In order to arrive at a counter-example to the weaker thesis we need to find a claim that is both, by de re modalist lights, a de dicto necessity and a posteriori. Consider the following candidate counter-example:

(CE) Necessarily, if there is water on a planet, then there is H_2O on that planet.[21]

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[20] Note that many of the claims the de re modalist takes to be de dicto modal will be, for Kripkeans, de re modal. This is because of the divergent accounts of the de re/de dicto distinction in play. (Kripkeans adopt the standard account of the de re/de dicto distinction.)

[21] Thanks to an anonymous referee for an earlier paper for an example ('Necessarily, if there is water on a planet then there are oxygen atoms on that planet.') on which I base

By de re modalist lights, on a natural reading of (CE), it is de dicto. If we adopt the classical account whereby the falsehood of its antecedent is sufficient for the truth of a conditional, then the problem of reconciling the purported modal status of this claim with the contingent existence of water is apparently side-stepped. Consider how, on the Kripkean account, a posteriori KDRN are known. The broad account is that we arrive at knowledge of a necessary a posteriori truth via modus ponens inference from an a priori major premise and a contingent minor premise. A relatively straightforward case is as follows.

Argument 1

P1 If water is H_2O then it is necessary that water is H_2O.

P2 Water is H_2O.

C It is necessary that water is H_2O.

The major premise here does not have to be an ultimate item of a priori knowledge, since it may rest on some more basic (and purportedly necessary a priori) premise such as the premise that if a chemical kind has a given chemical formula, then it is necessary that that chemical kind has that formula. (Cashing this out fully would require further revisions, in which I will not indulge, to Argument 1.)

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this example. The example I actually use involves the necessity of identity rather than the essentiality of material composition. The example used is chosen for its relative simplicity: the philosophical points at issue are not affected.

Since (CE) is offered as a KDRN, the modus ponens account of necessary a posteriori knowledge is to extend to it. Thus:

Argument 2

P1* If water is H_2O then necessarily, if a planet contains water then that planet contains H_2O.

P2* Water is H_2O.

C* Necessarily, if a planet contains water then that planet contains H_2O.

Putting this into quantified modal logic, supposing that 'water' and 'H_2O' are names, we get:

P1F $(a = b)\ \tau \approx(\ldots x)((Px\ \&\ Cxa)\ \tau\ Cxb)$

P2F $a = b$

CF $\approx(\ldots x)((Px\ \&\ Cxa)\ \tau\ Cxb)$

On the de re modalist view, the use of a sentential modal operator creates a de dicto modal context: thus, CF, if true, meets Condition 1 (and so, if true, does C*). Condition 2 is also met, since we need the second, a posteriori, premise in order to arrive at the conclusion. So, is the claim that a truth is necessary only if it is a priori refuted by means of (CE)? I think not. The de re modalist will reject Argument 1 on the grounds that in P1, the consequent of the conditional misrepresents the logical form of the necessity pertinent to making essentialist claims about contingently existing beings. C* will be a question-begging attempt at a counter-example to logical empiricism unless there are independent grounds for using sentential necessity in P1*. When quantifying

over all possible planets, we can only take it that P1* is true if we are already committed to a sentential reading of the necessity pertinent to instances of the law of identity in which the terms refer to contingent beings.[22] Even if the necessitation of P1 is false, P1 is a necessary condition for P1*. Therefore, since P1 already embodies an anti-de re modalist view, C* begs the question against the de re modalist. The fact that the law of identity $(\ldots x)(x = x)$ is a logical truth does not settle the philosophical question of whether true instances of the law which refer to contingently existing beings are necessary truths. I do not find CE, then, to meet Condition 1 except, at best, in a manner that begs the question against the de re modalist. I conclude, in the absence of a non-question-begging example meeting Conditions 1 and 2, that de re modalism, if correct, undermines Kripke's attack upon the logical empiricist account of the relationship between necessity and a priority.

III. Conclusion

The problem with logical positivism lies not in its holding that all necessary truths are a priori, but rather in its conviction –inconsistent with the positivists' normative (as against naturalistic) approach to epistemology– that the only necessity is logical necessity. This is a conviction which Kripke and Kripkeans reject, yet its vestige remains in their modelling the syntax of all modality on that of logical modality. When one considers how modality actually works in natural languages, this approach is

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[22] In connection with this, Wiggins (*Sameness and Substance*, 106-11; *Sameness and Substance Renewed*, 113-6) specifically argues against a sentential reading of the necessity of identity and offers instead a de re modalist reconstruction of the Barcan proof of the necessity of identity. See also my *Modality and Anti-Metaphysics* (Aldershot: Ashgate, 2001), 50-3.

questionable. Adherence to it in logic and philosophy generates unwelcome results which can be dissolved by adopting de re modalism. Kripkeans are right, I suggest, against the positivists, that some necessity is a posteriori: true statements of de re necessity are at least usually a posteriori truths. When they are a posteriori, the alethic-modal status of true statements of de re necessity is as follows. They are logically contingent. Those essentialists who take it that metaphysical necessity is not logical necessity are right against their post-Kripkean and pre-Kripkean opponents.[23] The logical positivists were right, I suggest, that all necessary truths –or at least all those containing no embedded modality– are a priori truths. De re modalism is an approach within the philosophy of modality that enables this synthesis.[24]

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[23] Although not a de re modalist, N.U. Salmon, 'The Logic of What Might Have Been', *Philosophical Review* (1989) 98: 3-34, e.g., 13, is an example of an essentialist who views metaphysical necessity as distinct from logical necessity.

[24] I acknowledge the support of Spanish Ministry of Education and Science research project HUM2006-04955/FISO, led by Professor Juan Vázquez of the Department of Logic and Moral Philosophy, University of Santiago de Compostela. Thanks to my fellow participants in the project for comments on a presentation of this work in June 2007.