NECESSITY AND APRIORICITY

By

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My aim in this thesis is to show 1) that the standard examples of *a posteriori* necessity and *a priori* contingency are not counterexamples to the traditional view of the relation between necessity and *a prioricity*, and 2) that such examples rest on a common confusion, viz., failing to recognize the role the linguistic vehicle plays in the suggested epistemic status of such examples. I begin by pointing out a puzzle that arises in all such cases: for each alleged counterexample, *C*, the considerations which are taken to show that *C* is necessary/contingent entail that there are two sentences which express the same proposition though when considered, as it were, under the aspect of one sentence is said to be *a priori* and under the aspect of the other is said to be *a posteriori*. This results in three inconsistent claims of this form: it is *a priori* that *p*; it is not *a priori* that *q*; that *p* = that *q*. If all three claims are true, it follows that there is a proposition which is *a priori* and not *a priori*. Thus, on pain of contradiction, one of the three claims must be rejected. I will argue that, in each case, rejecting either of two of the three claims rules out the example as a counterexample to the traditional view, while rejecting the third is untenable. If this is right, then, in each case, we can show that we do not after all have a counterexample to the traditional view.

CHAPTER 1
INTRODUCTION

Preliminaries

In this thesis, I will be considering a range of alleged examples of *a posteriori* necessity and *a priori* contingency. For my purposes, it will not be necessary to give analyses of necessity and *a priority*, but it will be useful to fix some ideas at the outset. The following remarks and schemas are meant to explicate some intuitive notions and equivalences that are the background of the subsequent discussion.

Necessity/Contingency

For reasons that will emerge later in the discussion, I will distinguish between attributing modal and epistemic properties to sentences and propositions. Propositions will be thought of as they traditionally have been, as reified sentence meanings, insofar as they contribute to determining under what conditions a sentence is true or false. To say that two sentences s_1 and s_2, in some language L, express the same proposition is to say that s_1 and s_2 are synonymous in L. When s_1 and s_2 are sentences in distinct languages, L_1 and L_2, we can say that they express the same proposition iff s_1 in L_1 and s_2 in L_2 are intertranslatable. For simplicity, I ignore context sensitive sentences, such as those involving indexical terms and those whose truth-values vary from use to use because of tense. One example we will look at contains an indexical term but it should be clear from the discussion that nothing hinges ignoring its context sensitivity. Everything I need to say could be reformulated to adjust for context sensitivity.

I will be assuming the equivalences expressed in the following schemas, where '*p*' is a schematic letter for propositions and '*s*' is used for names or descriptions of sentences.

- It is necessary that *p* iff it is not possible that it is not the case that *p*.
- It is contingent that *p* iff it is the case that *p* and it is not necessary that *p*.
- *s* is necessarily true (in L) iff it is not possible that *s* is not true (in L).
- *s* is contingently true (in L) iff *s* is true (in L) and *s* is not necessarily true (in L).

Occasionally, I will employ the terminology of possible worlds. While I do not take possible worlds talk to be basic, it is a useful heuristic when evaluating some of the examples we will consider. In those instances, the relation between necessity, possibility, and contingency will be understood as follows:

- It is necessary that *p* iff it is the case that *p* in every possible world.
- It is possible that *p* iff it is the case that *p* in some possible world.
- It is contingent that *p* iff it is the case that *p* in the actual world and it is not the case that *p* in every possible world.
- *s* is necessarily true (in L) iff *s* is true (in L) in every possible world.
- *s* is possibly true (in L) iff *s* is true (in L) in some possible world.
- *s* is contingently true (in L) iff *s* is true (in L) in the actual world and *s* is not true (in L) in every possible world.

A priori/Aposteriori

To say that something is *a priori* is to say that it is knowable independently of experience, and, intuitively, this is just to say that there is a way of knowing it, or coming to know it, which does not require empirical investigation. The sorts of things which are generally said to fall under this category include logical and mathematical truths, e.g., propositions expressed by sentences of the form 'P or ~P' and '((P → Q) & P) → Q)', 'a is a', or the propositions expressed by '2 + 2 = 4', '2 > 1', etc., or axioms of formal systems like geometry, e.g., that a line contains at least two points, and certain propositions which appear to be true, in some sense, by definition, such as the proposition that all bachelors are unmarried males. These are typical examples of propositions which are said to be *a priori*. By contrast, that the Earth is the third planet from the Sun, that lions are carnivores, that the capital of France is Paris, and that Thomas Jefferson wrote the Declaration of Independence are taken to be truths which are not knowable independently of experience, and, hence, examples of *a posteriori* truths.

It should be noted that being knowable *a priori* appears to be relative, in some cases, at least, to particular subjects, that is, it seems that in some cases a proposition may be knowable

(not just known) *a priori* by some but not by others. Consider the proposition expressed by 'Samuel Clemens is Mark Twain'. This is one of the standard examples of an *a posteriori* necessity. But what was the epistemic status of this for Mark Twain? It seems that he, at least, knew it to be true *a priori*, i.e., without empirical investigation. But it seems that it is not the case that it is even knowable a priori for everyone. This seems to be the way Kripke (1980, p. 56) is thinking about the *a priori* in his discussion of his standard meter bar example in *Naming and Necessity*, as in the following passage.

> What then is the epistemological status of the statement 'Stick S is one meter long at t0', for someone who has fixed the metric system by reference to stick S? It would seem he knows it a priori. For if he used stick S to fix the reference of the term 'one meter', then as a result of this kind of 'definition'… he knows automatically, without further investigation, that S is one meter long…. So in this sense, there are contingent a priori truths.

It is clear in this case that Kripke is assuming that this is not so for someone who has not fixed the metric system by reference to stick S. That is, for many others at least, that S is one meter long, Kripke is assuming, will neither be known a priori nor be knowable a priori. This suggests that we shouldn't think that there are *a priori* truths *simpliciter*—i.e., that an *a priori* truth is simply one which is knowable *a priori* by someone. Instead, it would be better to think of the properties being *a priori* and being *a posteriori* as fundamentally relational properties, i.e., as relating propositions/sentences to particular subjects. We can represent this as follows, where we let '*k*' stand for some knower.

- It is *a priori* that *p* for *k* iff that *p* is knowable for *k* independently of experience.
- It is *a posteriori* that *p* for *k* iff it is knowable that *p* for *k* and it is not *a priori* for *k* that *p*.
- *s* is true *a priori* (in L) for *k* iff it is knowable that *s* is true (in L) for *k* independently of experience.
- *s* is true *a posteriori* (in L) for *k* iff it is knowable that *s* is true (in L) for *k* and *s* is not true *a priori* (in L) for *k*.

The Traditional View

The distinction between the *a priori* and *a posteriori* was first drawn clearly in the Modern period. Hume and Leibniz identified *a priori* propositions with necessary and analytic propositions. Leibniz (1714, §33) called such propositions "truths of reasoning" and contrasted them with "truths of fact."

> Truths of fact are contingent and their opposite is possible. When a truth is necessary, its reason can be found by analysis, resolving it into more simple ideas and truths, until we come to those which are primary. Primary principles cannot be proved, and indeed have no need of proof; and these are identical propositions whose opposite involves an express contradiction.

Hume (1698, p. 40) made a similar distinction between what he called "relations of ideas" and "matters of fact."

> All the objects of human reason or inquiry may naturally be divided into two kinds, to wit, "Relations of Ideas," and "Matters of Fact." Of the first kind are the sciences of Geometry, Algebra, and Arithmetic, and, in short, every affirmation which is either intuitively or demonstratively certain. That the square of the hypotenuse is equal to the square of two sides is a proposition which expresses a relation between these figures. That three times five is equal to half of thirty expresses a relation between these numbers. Propositions of this kind are discoverable by the mere operation of thought, without dependence on what is anywhere existent in the universe…. Matters of fact, which are the second objects of human reason, are not ascertained in the same manner, nor is our evidence of their truth, however great, of a like nature with the foregoing. The contrary of every matter of fact is still possible, because it can never imply a contradiction….

Kant departed from this picture in one important respect, in the *Critique of Pure Reason*, suggesting that there are some *a priori* truths which are not analytic, i.e., not "truths of reasoning" or about "relations among ideas." For instance, he held that certain truths of arithmetic, while *a priori*, were *synthetic*. One example Kant gives is the proposition that 7 + 5 is 12. Kant took analytic propositions to be those in which the concept of the predicate is contained in the concept of the subject.[1] He maintained that the proposition that 7 + 5 is 12 did not meet

[1] While, strictly speaking, propositions don't contain subjects and predicates, the use of these grammatical categories helps represent the intuitive structure of the proposition expressed by subject-predicate sentences.

this criterion because the concept of 12 is not obtained by merely considering the union of 5 and 7. Yet it is clearly *a priori* since we can know the proposition without appeal to experience. In this sense, he believed that there were synthetic *a priori* truths.

However, while Kant (*Ibid*., p. 38) differed from Hume and Leibniz in this respect, he followed them in identifying the *a priori* with the necessary:

> Now, in the first place, if we have a proposition which contains the idea of necessity in its very conception, it is a judgment *a priori*; if, moreover, it is not derived from any other proposition, unless from one equally involving the idea of necessity, it is absolutely *a priori*. Secondly, an empirical judgment never exhibits strict and absolute, but only assumed and comparative universality (by induction); therefore, the most we can say is—so far as we have hitherto observed—there is no exception to this or that rule. If, on the other hand, a judgment carries with it strict and absolute universality, that is, admits of no possible exception, it is not derived from experience, but is valid absolutely *a priori*.

This view was also widely held among the early analytic philosophers who, despite Kant's challenge, largely also identified the *a priori* with the analytic and the necessary. Ayer (1952, p. 31), for instance, is very explicit about this in *Language Truth and Logic*, a classic statement of the widely influential views of the Logical Positivists:

> Like Hume, I divide all genuine propositions into two classes: those which, in his terminology, concern "relations of ideas," and those which concern "matters of fact." The former class comprises the a priori propositions of logic and pure mathematics, and these I allow to be necessary only because they are analytic. That is, I maintain that the reason these propositions cannot be confuted in experience is that they do not make any assertion about the empirical world, but simply record our determination to use symbols in a certain fashion.

Wittgenstein (1922, 5.525) took a very similar line in the *Tractatus Logico-Philosophicus*, which served as an inspiration for the Vienna Circle and the Logical Positivists. He held that *a priori/*necessary truths were tautologies and contrasted these with what he called "propositions with sense."

> The certainty, possibility, or impossibility of a situation is not expressed by a proposition, but by an expression's being a tautology, a proposition with sense, or a contradiction.

Propositions with sense give us information about the world and are contingent. Tautologies (and contradictions), by contrast, are only said to be meaningful in the sense that they provide us with information about the use of symbols in our system.

And, while Russell (1931, p. 103) wasn't as explicit on this point, it appears that he had similar considerations in mind when he argued, in *The Problems of Philosophy*, that "all *a priori* knowledge deals exclusively with the relations of universals," and took the truths of logic to be primary examples.

One feature common to all these suggestions, including Kant's, is the view that all *a priori* propositions are necessary and, conversely, that all *a posteriori* propositions are contingent.[2] I will refer to this as the traditional view. It can be expressed in the claim that all instances of (T) are true.

(T) It is necessary that $p \leftrightarrow$ it is *a priori* that p.

Up until the last half of the Twentieth Century, this was the accepted view regarding the relation between the *a priori* and the necessary.

The Challenge to the Traditional View

The traditional view came under attack starting with the work of Saul Kripke. In his book *Naming and Necessity*, which began as a series of lectures at Princeton in 1970, Kripke presents a number of apparent examples of *a posteriori* truths which are necessary and *a priori* truths which are contingent. Since then the number and range of such examples has grown and it is now generally held that the relation between necessity and *a priority* is not nearly as close as the traditional picture suggests. For example, Scott Soames (2003, p. 372) writes:

[2] Kripke talks as though '*a priori*' and 'necessary' were taken to be synonymous, but I haven't come across any evidence to suggest that the relation was taken to be anything stronger than necessarily extensional equivalence.

From our perspective today, we can see that not all necessary truths are a priori, not all a priori truths are necessary, and not all members of either class are transparently so.

In a similar vein, Paul Boghossian and Christopher Peacocke (2000, p. 31), write:

> Being a priori is to be sharply distinguished from being necessary…. Examples, and reflection on the nature of the properties, both show that there are a priori propositions which are not necessary. Kripke and Kaplan supplied conclusive examples…. Conversely, in the presence of examples of the necessary a posteriori, it is clear that a proposition's being necessary does not ensure that it is a priori.

The following is a list of some of the putative examples of the necessary a *posteriori* and contingent a *priori*.

Necessary *APosteriori*

- Hesperus is Phosphorus
- Water is H2O
- Actually, Kripke is a philosopher
- If Earth exists, then Earth is a physical object

Contingent *APriori*

- All actual philosophers are philosophers
- If someone wrote the Declaration of Independence then the actual person who wrote the Declaration of Independence wrote something.
- If someone wrote the Declaration of Independence then dthat(the person who wrote the Declaration of Independence)3 wrote something.
- S is one meter long at t (for someone who fixes 'one meter' by reference to the length of S at t)

I will take up each of these examples and why they are thought to have the modal and epistemic status suggested in the body of this thesis.

Thesis and Strategy

My aim is to show, not only that the standard examples of a p*osteriori* necessity and *a priori* contingency aren't counterexamples to the traditional view, but also that they rest on a

[3] The expression 'dthat(the F)' is a term introduced by David Kaplan (1978) which by stipulation refers directly, in the sense of contributing only an object to the proposition expressed by a sentence containing it, namely, the object, if any, which is the denotation of 'the F'. See Chapter 3 for discussion.

common confusion, that of failing to recognize the role the linguistic vehicle plays in the suggested epistemic status of such examples. The strategy is as follows. I begin by pointing out a puzzle that arises in all such cases: for each alleged counterexample, *C*, the considerations which are taken to show that *C* is necessary/contingent entail that there are two sentences which express the same proposition though when considered, as it were, under the aspect of one sentence is said to be *a priori* and under the aspect of the other is said to be *a posteriori*. This results in three inconsistent claims of the following form.

- It is *a priori* that *p*.
- It is not *a priori* that *q*.
- That *p* = that *q*.

Claims (i)-(iii) imply that there is a proposition which is *a priori* and not *a priori*. Thus, on pain of contradiction, one of the three claims must be rejected. I will argue that, in each case, rejecting either of two of the three claims rules out the example as a counterexample to the traditional view, while rejecting the third is untenable. If this is right, then, in each case, we can show that we do not after all have a counterexample to the traditional view.

I will begin, in Chapter 2, by considering alleged cases of a posteriori identities, those involving proper names as well as so-called theoretical identities involving natural kind terms. In Chapter 3, I'll look at examples that arise from the use of 'actual' and 'actually' as well as related cases involving Kaplan's 'dthat' operator. Chapter 4 deals with examples that appeal to essential properties. In Chapter 5, I will consider the sorts of cases that arise from stipulative reference fixing, such as Kripke's example of the standard meter bar in Paris. In the final chapter, Chapter 6, I'll lay out the argument sketched above in greater detail and then conclude by noting some striking linguistic similarities that all such examples seem to share which suggests an explanation to the initial puzzle: the modal status of each example is based on the

proposition expressed whereas the epistemic status is based, at least in part, on knowledge about the terms used to express it.

CHAPTER 2
IDENTITY STATEMENTS

Kripke (1980) argued famously that certain identity statements of the form '*a* is *b*', where '*a*' and '*b*' are proper names, such as (1) and (2), if true, are necessarily true and true *a posteriori*.

(1) Hesperus is Phosphorus
(2) Butch Cassidy is Robert LeRoy Parker

They are said to be necessarily true because it is assumed that, for any x and y, if x = y then *necessarily* x = y. Call this the identity thesis (I).

(I) $(x)(y)(x = y \rightarrow \Box x = y)$

According to Kripke, (I) is a thesis about objects:

> It was clear from $(x)\Box(x = x)$ and Leibniz's law that identity is an internal relation: $(x)(y)(x = y \rightarrow \Box x = y)$. (What pairs (x, y) could be counterexamples? Not pairs of distinct objects, for then the antecedent is false; nor any pair of an object and itself, for then the consequent is true.)[4]

Cases like (1) and (2) are said to be examples of the latter, for the pair (Hesperus, Phosphorus) is a pair of an object and itself, and the same goes for the pair (Robert LeRoy Parker, Butch Cassidy).[5] It follows, then, in conjunction with (I), that (1) and (2) express necessary truths.

On the other hand, such examples are said to be *a posteriori* because knowledge of them is not a matter of reasoning alone, but requires some empirical work. As Frege pointed out, it was considered a great astronomical discovery that Hesperus is Phosphorus. And it apparently came as a surprise to many that Butch Cassidy was Robert LeRoy Parker because, according to wanted posters, he was someone else.[6]

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[4] Ibid. (p. 3).

[5] I am assuming here that proper names refer directly; later in this chapter, I will consider the implications of a Fregean view of proper names in such contexts.

[6] According to wanted posters, Butch Cassidy was George Parker.

However, it is difficult to see why such examples are said to be *a posteriori* given the argument that they are necessary. For example, if, as suggested, (1) is true because of (I) then it is true because the pair (Hesperus, Phosphorus) is the same pair as (Hesperus, Hesperus)—likewise, if (2) is true because of (I), it is true because the pair (Robert LeRoy Parker, Butch Cassidy) is the same pair as (Butch Cassidy, Butch Cassidy). If this is right, then presumably (1) and (1b) express the same proposition.

(1b) Hesperus is Hesperus

So there is a puzzle here: the reasons for thinking that (1) is necessarily true require that it express the same proposition as (1b) yet the former is said to express an *a posteriori* truth whereas the latter is generally thought to expresses an *a priori* truth. How do we account for this? It seems to me that there are two possibilities, but neither accommodates the view that examples like (1) and (2) are cases of *a posteriori* necessity.

One explanation is the Fregean line that the difference between sentences of the form '*a* is *b*' and '*a* is *a*' is due to some difference in cognitive content. For example, 'Hesperus is Phosphorus' may be held to express an *a posteriori* truth because there are distinct senses[7] associated with 'Hesperus' and 'Phosphorus', which go into the propositions expressed by the sentence, and it takes some empirical investigation to see that they pick out the same object. But, while this view captures the intuition that the proposition expressed is *a posteriori*, it seems in conflict with the reasons for supposing it is necessary. For example, if an accurate account of what (1) expresses is something like (1c),

(1c) The first star visible in the evening is the first star visible in the morning

[7] Here 'sense' can be taken as a general placeholder for any of the usual candidates: definite descriptions, modes of presentation, primary intensions, etc.

then (1) is contingent (if true) because the descriptions ‘the first star visible in the evening’ and ‘the first star visible in the morning’ are not necessarily coextensive.

A rigidified description account would avoid this difficulty. This sort of account would invoke modifiers that in effect turn definite descriptions into expressions which designate the same object in every possible world. A common way of doing this is by prefixing the nominal of a definite description with the term ‘actual’. For example, the description ‘the actual first star visible in the evening’ is said to pick out the same object in every possible world. If this is right, then (1d) expresses a necessary truth.

(1d) The actual first star visible in the evening is the actual first star visible in the morning.

However, there are problems with this response on behalf of someone who holds that (1) expresses an *a posteriori* and necessary proposition. For one thing, those who accept that such examples are necessary and *a posteriori* tend to reject description theories of proper names. This was part of the motivation, in fact, for seeing sentences such as (1) as expressing necessary truths in the first place. So it is unlikely they would be willing to endorse such an account. For another thing, in *Naming and Necessity*, Kripke made a convincing case against description theories in general. Perhaps the most obvious problem is that proper names don’t appear to be semantically equivalent to definite descriptions. For instance, it’s not required for competency in the name ‘Aristotle’ that one associate any definite description, rigid or not, with Aristotle (e.g., suppose it’s suggested that ‘Aristotle’ is equivalent to the description ‘the (actual) man who taught Alexander the Great’; one could fail to know that Aristotle taught Alexander the Great, yet be able to use and understand sentences containing the name ‘Aristotle’). In the next chapter, I will argue that a further problem for the rigidified description account is that the use of ‘actual’, and other such rigidifiers, give rise to *the very same puzzle* that arises in the case of proper names.

The other option is to say that what is a posteriori is that the terms flanking the identity sign corefer—thus, the idea is that (1) is a posteriori because it is about, in part, the terms included in it. One problem with this line is that it forces us to give up the intuitive view that identity claims are about the referents of the contained terms. And, again, examples like (1) and (2) are supposed to be necessary because of (I), which is a metaphysical thesis, not a linguistic thesis. As Kripke (ibid. pp. 107-108) points out, "If you say for every x and y, if x = y then necessarily x = y, or something like that—no names occur in that statement at all, nor is anything said about names." So, while the metalinguistic suggestion accounts for the intuition that such examples are a posteriori, it is at odds with the reasons given for thinking that they're necessary. If these statements were even in part about the names, why should they be necessary? It is surely a contingent matter whether two names corefer.[8]

Natural Kinds

Similar considerations raise difficulties for the view that theoretical identity claims involving natural kind terms are necessary *a posteriori*. If we assume, with Kripke and Putnam, that the quantifiers in the identity thesis range over natural kinds as well as particulars, then the suggestion that theoretical identity claims like (3) and (4) are examples of *a posteriori* necessity results in the same puzzle.[9]

(3) Water is H_2O
(4) Gold is AU

[8] This worry is insurmountable when we turn to true identity statements made using demonstratives such as 'this is that'. Clearly those very uses of the demonstratives might have picked out things different from the ones they picked out. So even if some story could be told about proper names, it would not be general enough to handle the problem.

[9] I will not have anything to say in this thesis about the status of these examples if natural kinds terms are taken not to be analogous to names. Thus, my conclusion here is conditional on the assumption that natural kinds terms function like names of properties.

If (3) and (4) are said to be necessarily true because they are instances of (I) then they are necessarily true in virtue of expressing the same propositions as (3b) and (4b), respectively.

(3b) Water is water
(4b) Gold is gold

Yet (3) and (4) are alleged to express *a posteriori* truths whereas (3b) and (4b) are true *a priori*.

The same solutions we considered in the case of proper names are available here, with the same consequences. Either what is motivating the view that theoretical identities are *a posteriori* is the thought that there are distinct senses associated with the natural kind terms flanking the identity sign, or it is the thought that it is not *a priori* that such terms pick out the same natural kinds. But, by parity of reasoning, neither solution appears to be compatible with the claims that such examples are necessarily true.

In this chapter, I have been concerned with pointing out that there is a genuine puzzle that arises in the cases of identity statements which are said to be a posteriori and necessary. The puzzle is that given the reasons for thinking that such examples are counterexamples to the traditional view leads to the view that there are two sentences which express the same proposition though looking at it the one way and the other lead to different judgments as to whether the proposition is a priori or a posteriori. In the following chapters, I aim to show that all the alleged putative counterexamples give rise to the same puzzle.

CHAPTER 3
'ACTUAL', 'ACTUALLY', 'DTHAT'

The Actual F

It is worth noting at the outset of this chapter that some philosophers hold that 'actual' and 'actually' do not make any difference to the modal status of propositions expressed by sentences containing them.[10] If this view is correct, then none of the examples we will consider in this chapter present problems for the traditional view. The purpose of this chapter is to show that, even if 'actual' and 'actually' do affect the modal status of sentences/propositions they are involved with in the way often assumed, the standard examples involving them can be shown to result in the same puzzle that arises in regards to proper names and natural kind terms.

In certain contexts, the use of 'actual' and 'actually' is said to result in cases of *a posteriori* necessity and *a priori* contingency. Consider an example offered by Soames (2005, p. 31):

(5) If someone wrote the Declaration of Independence then the actual person who wrote the Declaration of Independence wrote something.

Contrast (5) with (5*)

(5*) If someone wrote the Declaration of Independence then the person who wrote the Declaration of Independence wrote something.

This is (presumably) necessarily true, whereas (5) is said to be contingent. The reason is that the description in (5*), viz., 'the person who wrote the Declaration of Independence' is non-rigid, i.e., it does not designate the same individual in every possible world, whereas the description in (5), viz., 'the actual person who wrote the Declaration of Independence' is said to be a rigid designator, i.e., to pick out the same individual in every possible world. If this is right then evidently the term 'actual' is playing a part in individuating the proposition expressed by (5). If the proposition expressed by the sentence is what is evaluated at different possible worlds (which

[10] Michael Jubien, for example.

is the assumption we are operating under, as our question is whether there are propositions which are *a priori* but contingent), then what 'actual' appears to do in such contexts is modify the predicates within its scope in such a way as to have us only consider their (actual) extensions and disregard their intensions.[11] In this sense, 'the actual F' functions in a way similar to Kaplan's (1978) 'dthat' operator: expressions of the form [dthat(the F)][12] work like directly referring terms in that nothing more is contributed to the meaning of the sentence than the unique object denoted by [(the F)], even though there is a term appearing in it which has an intension, and our grasping its intension is relevant to our understanding what it picks out. In 'the actual F', 'actual F' functions to introduce just the actual extension of 'F' into the propositions, and then the denotation of 'the actual F' is just the unique thing, if any, in the extension of 'F'. The proposition expressed is individuated with respect not to the intension of 'F' but with respect to its extension.

Now, the consequent of (5) is said to be contingently true because the actual denotation of 'the person who wrote the Declaration of Independence' might not have written anything. However, if this is what the consequent of (5) says, then prefixing the nominal of any contingently true description of Thomas Jefferson with 'actual' and plugging it in the consequent should get the same result. Consider (6).

(6) If someone wrote the Declaration of Independence then the actual third president of the US wrote something.

If 'actual' works as suggested, i.e., by narrowing our focus to just the actual extension of the predicate in its scope, then (5) and (6) express the same proposition; the consequent in each case

[11] For a more detailed account of the semantics of 'actual' and 'actually' in modal contexts see Kirk Ludwig's "A Conservative Modal Semantics with Applications to de re Necessities and Arguments for Coincident Entities."

[12] I will be using the left '[' and right ']' square brackets for Quinean corner quotes.

is about the same person, as the same extension is introduced into the proposition. But while (5) and (6) are contingent for the same reason, i.e., because it is not necessary that the denotation of those descriptions wrote something, (6) it seems isn't true *a priori*.

Once again, we see the same kind of puzzle. Given the suggested counterexample, we are led to the view that there are two sentences which express the same proposition though seen in relation to one it appears a priori and in relation to the other a posteriori.

Kaplan's 'Dthat' Operator

As I mentioned, when 'actual' is added to the nominal of a definite description, it functions in a way similar to Kaplan's 'dthat' operator. Again, expressions of the form [dthat(the F)] work like directly referring terms in that nothing more is contributed by it to the proposition expressed by a sentence containing it than the unique object denoted by [(the F)]. We can express its function in a reference clause in which the description is deployed in the antecedent of a conditional to constrain the value of a variable, and the referent is given as the value of a variable:

> For any x, for any nominal N, the denotation of [(the N)] is x → the referent of [dthat(the N)] is x.

Designators of the form [the actual F] and [dthat(the F)] are said to be rigid designators—like (directly referring) proper names, they pick out the same object in all possible worlds in which they have referents.

It should be evident at this point why rigidified descriptions do not avoid the initial problem involving proper names and natural kind terms. Recall that in §2 the question was raised as to how distinct identity sentences could be said to express the same proposition yet differ with regard to being *a priori*/*a posteriori*. For example, how can it be that (1), repeated here,

(1) Hesperus is Phosphorus

is true *a posteriori* and (1b), repeated here,

(1b) Hesperus is Hesperus

is true *a priori* if the sentences 'Hesperus is Phosphorus' and 'Hesperus is Hesperus' express the same proposition? One explanation was that (1) is true *a posteriori* because there are distinct senses/descriptions/intensions associated with the names 'Hesperus' and 'Phosphorus' and it takes some empirical work to see that they track the same object. The problem with this account was that it seemed to render (1) contingent. For if a correct account of what (1) expresses comes to something like

The first star visible in the evening is the first star visible in the morning then it would not be necessarily true, because the descriptions flanking the identity sign (even fixing their meanings) do not necessarily denote the same objects. But now consider (8) and (9) as possible accounts of the proposition expressed by (1).

(8) The actual first star visible in the evening is the actual first star visible in the morning.
(9) Dthat(the first star visible in the evening) is dthat(the first star visible in the morning).

Would such *rigidified* descriptive accounts of (1) accommodate the view that it is necessary *a posteriori* that Hesperus is Phosphorus? No, because the same puzzle arises with respect to these examples. Take (8). If (8) is necessarily true, it is so because it says that a particular object bears the identity relation to itself. And this is a fact independent of how the object is picked out. Thus, if (8) is necessarily true, it expresses the same proposition as (10).

(10) The *actual* first star visible in the evening is the *actual* first star visible in the evening.

But (10) is presumably *a priori*, not *a posteriori*, so this line leads to the same problem we began with: two sentences express the same proposition though in relation to one of them we want to say the proposition is *a posteriori* and in relation to the other that it is *a priori*.

Likewise, if (9) is necessarily true, then it expresses the same proposition as (11).

(11) Dthat(the first star visible in the evening) is dthat(the first star visible in the evening).

But whereas (9) would have to be true *a posteriori* to account for the initial puzzle, there doesn't seem to be any reason to suppose that (11) is true *a posteriori*.

Thus, appealing to rigidified descriptive accounts of proper names to address the initial problem doesn't work. Evidently, then, the correct explanation of why examples like (1)-(4) are said to be a posteriori must appeal to the alternative suggestion that knowledge about the linguistic vehicle is playing a role in such cases. We will examine this suggestion in greater detail in the final chapter.

All Actual Fs are Fs

There are also examples where the use of 'actual' is said to result in contingent *a priori* truths. Compare (12) and (13).

(12) All philosophers are philosophers.
(13) All actual philosophers are philosophers.

(12) appears to be necessarily true and *a priori*; however, (13) is supposedly contingent and true *a priori*. The idea here is usually brought out by appeal to possible worlds. For example, (13) is analyzed as (13b), where '@' represents the actual world:

(13b) (x)(x is a philosopher in @ → x is a philosopher)

This is contingent because there are possible worlds where it is false. Thus, 'actual' appears to do the same work here as above: it narrows our focus to the actual extension of the predicate in its scope. For instance, (13) says of a some particular individuals—*those people who happen to be philosophers*—that they are philosophers, and this is a contingent truth since it is not necessarily the case that all (or some) of those individuals are philosophers. But notice that the same problem arises here: if this is what (13) says then it is difficult to see why it is thought to be true

a priori, because it is not an *a priori* truth that those individuals who happen to be philosophers are philosophers. Take a similar case.

(14) All actual Brooklyn residents are Brooklyn residents.

If 'actual' works as suggested, then here 'actual' is modifying 'Brooklyn residents' in such a way as to have us only consider its actual extension, i.e., those individuals who happen to be residents of Brooklyn, and it isn't necessarily the case that those individuals are Brooklyn residents. However, it isn't *a priori*, either, that those people are Brooklyn residents. Consider (15).

(15) All actual Kings County residents are Brooklyn residents.

If (14) is said to be contingent because it is about the actual extension of 'Brooklyn residents' then (14) and (15) express the same proposition (the actual residents of Brooklyn and the actual residents of Kings County are the same). But (15) it seems isn't true *a priori* (many Brooklyn residents don't know (15) is true). So it appears we have another case where two sentences express the same proposition, though considered in relation to one we want to treat it as *a priori*, while considered in relation to the other we want to take it to be *a posteriori*.

Actually, P

Another formula for generating putative examples of necessary *a posteriori* truths is 'Actually, P', where 'P' is replaced by a sentence expressing a contingent truth, for example, (16).

(16) Actually, Ted Kennedy is a Massachusetts senator.

In such cases, 'actually' is said to function as a modal operator, and, since all (true) modal sentences are necessarily true, instances like (16) are said to express necessary truths. As with the previous example, the idea here is usually expressed in terms of possible worlds; (16), for example, is analyzed as (16b),

(16b) Ted Kennedy is a Massachusetts senator in @.

which, if true, is true in every possible world. Evidently, on this suggestion, 'actually' does the same work as 'actual': in effect, it narrows our focus to just the actual extension of the predicate, disregarding its intension. For instance, suppose we introduce the term 'menator' as follows with the understanding that its meaning is exhausted by its extension.

(x)(x is a menator iff x is John Kerry or x is Ted Kennedy)

Using this term gets us the same result—(17) expresses the same proposition as (16).

(17) Ted Kennedy is a menator.

However, (17) is presumably true *a priori* for us since it is true by stipulation that 'menator' is true of Ted Kennedy or John Kerry; anyone familiar with the procedure for introducing the term 'menator' knows that (17) is true *a priori*.

Another way of achieving this effect, of a sentence that expresses the same proposition as (16) but in relation to which we want to say, in contrast to (16), that what is expressed is knowable *a priori*, is by introducing a special form of predicate which makes the extension of the predicate explicit and is understood to contribute only the extension that it makes explicit. We introduce the predicate form, [ext(α_1, α_2, α_3, …,)], which functions as follows, letting 'α_1', 'α_2', 'α_3', … range over proper names.

For any α_1, α_2, α_3, …, and any x_1, x_2, x_3, …, if Ref(α_1) = x_1, Ref(α_2) = x_2, Ref(α_3) = x_3, …, then [ext(α_1, α_2, α_3, …,)] is true of x $\leftrightarrow$ x = x_1 or x = x_2 or x = x_3 or….

Here we take this to be giving extensionally the satisfaction conditions for the predicate form. Now, given the way [ext(α_1, α_2, α_3, …,)] works, (18) expresses the same proposition as (16).

(18) Ted Kennedy is an ext(Ted Kennedy, John Kerry).

This is perhaps a better example for our purposes than (17) because it makes explicit in a way available to anyone who understands the sentence the information about (17) that is available only to the ones privy to the introduction of the term. We can as it were read off from (18) that

the proposition it expresses is true: one who understands how [ext(α_1, α_2, α_3, …,)] works can look at (18) and know it to be true *a priori*, even without knowing the referent of 'Ted Kennedy'. So, again, we have a systematic way of going from a class of sentences which are supposed to provide examples of necessary *a posteriori* sentences to sentences expressing the same proposition which seem to be knowable *a priori*.

I have argued that the view that the examples in this chapter have the modal status they are said to suggests that 'actual' and 'actually' behave in such a way as to restrict our attention to just the extensions of the predicates in their scope. If this is right, then the reasons given for supposing that such examples are necessary/contingent leads to the same puzzle as with identity statements—namely, that there are two sentences which express the same proposition yet which in relation to one seems *a priori* and in relation to the other *a posteriori*.

CHAPTER 4
STATEMENTS ABOUT ESSENTIAL PROPERTIES

Consider sentences of the form 'if *a* exists then F*a*', where 'F' is thought to express an essential property of *a*, and a property that cannot be known *a priori* to be instantiated by *a*, for example:

(19) If Earth exists then Earth is a physical object.

This appears to be necessarily true and true *a posteriori*. The view that it is necessarily true rests on the claim that

For any x, if x is a physical object, then necessarily if x exists, x is a physical object.and the fact that Earth is physical object. It appears to be *a posteriori* because we cannot know *a priori* that Earth is a physical object, because this requires knowing among other things that it exists, and we cannot know that it exists *a priori*.

It seems to me there is an intuitively compelling way of seeing that something is going on here which is very similar to what is going on in the alleged cases of *a posteriori* identity. Let's assume, as suggested, that (19) is not true *a priori*. Now, imagine that elsewhere in the galaxy there is a planet (call it Planet-X) much like Earth. For the sake of simplicity, assume that people there speak a language similar to English in that it shares the same grammar and most of the same terms, and all the non-referring terms have the same intensions.[13] However, due to certain physical limitations, the astronomers on Planet-X cannot observe Earth with their instruments (perhaps other celestial objects are always aligned in such a way as to block direct observation). Nonetheless, their observations of the behavior of other celestial bodies in our solar system lead them to posit a planet with roughly Earth's physical properties and orbit. Further, suppose that

[13] It can be thought of analogous to Twin English in Putnam's Twin Earth thought experiments.

they give the planet a name, say, 'Shmearth'. Intuitively, in this scenario (19) and (20) express the same proposition.

(20) If Shmearth exists then Shmearth is a physical object.[14]

In this case, the referent of 'Earth' is the referent of 'Shmearth'—we can imagine the denizens of Planet-X eventually developing the technology to observe Earth directly (or even travel to Earth) at which time they would conclude that Shmearth exists. And this in conjunction with certain linguistic knowledge, specifically, the knowledge that Earthlings use the name 'Earth' to refer to what they call 'Shmearth' would put them in a position to see that 'Earth' and 'Shmearth' corefer. The crucial point is that, due to the manner in which 'Shmearth' is introduced, the astronomers on Planet-X know (20) to be true without further investigation; in positing Shmearth to account for the behavior of other physical objects, they, in effect, stipulate that, if Shmearth exists, Shmearth is a physical object. For the Planet-X astronomers, (20) is *a priori*.

Thus, if (19) is *a posteriori*, as suggested, then, once again, we have a case where two sentences express the same proposition which in relation to one appears to differ in regards to its status as *a priori* in relation to the other.

Another example of this sort involves complex demonstratives. Take (23).

(23) This table is made of wood.

It is often assumed that anything that is made of wood is essentially made of wood.[15] Thus, if the demonstrative phrase 'this table' in (23) picks out an object which is made of wood, then (23) is

[14] Similarly, if, like Le Verrier, another astronomer had hypothesized the existence of a planet to explain the observed perturbations in Mercury's orbit but called it by another name, say, 'Shmulcan' then (21) and (22) could have been said to express the same proposition:

(21) If Vulcan exists then Vulcan is a physical object.
(22) If Shmulcan exists then Shmulcan is a physical object.

[15] This is questionable. We can imagine, over time, the table going through a process of petrifaction and turning to stone (thanks to Kirk Ludwig for this example). A better example may be 'this table was originally made of wood'.

necessarily true.[16] On the other hand, (23) appears to be *a posteriori* because it would require some examination of the table to see that it is made of wood. But consider (24).

(24) This wood table is made of wood.

Assuming that the demonstratives 'this table' in (23) and 'this wood table' in (24) function as directly referring terms,[17] (23) and (24) express the same proposition but, unlike (23), (24) appears to be *a priori*.

Thus, these examples that appeal to essential properties give rise to the same puzzle we have been noting all along: we can find different sentences which express the same proposition but our intuitions about the a prioricity of the proposition differ in relation to the different sentences.

[16] There is an existential concern in such cases—e.g., it isn't necessary that the table exists. For the purposes of this paper, I will assume that this can be avoided by conditionalizing the examples—e.g.: *if this table exists* then it is made of wood.

[17] Complex demonstratives are often treated as directly referring terms. On this view, the nominal in the complex demonstrative doesn't contribute to the truth conditions of the sentence in which it occurs. Kaplan (1978), McGinn (1981), Peacocke (1981), and Davies (1982), e.g., each take this line. In contrast, Richard (1993) and Lepore and Ludwig (2000) argue that the nominal contributes to the truth conditions of the sentence. On the latter view (23) and (24) do not express the same proposition. Even if this is right, there could be terms that function in the way Kaplan et. al. think actual complex demonstratives function, so the point can still be made.

CHAPTER 5
REFERENCE FIXING

In *Naming and Necessity*, Kripke suggests that (25), where 'S' is a name for the standard meter bar in Paris, is a contingent *a priori* truth, at least for the person who fixes the unit of one meter in relation to S at *t*.

(25) S is one meter long at time *t*[18]

It is said to be contingent because it is not necessarily the case that S is one meter long at *t*. It is supposed to be true *a priori* for the person who fixes the standard because one who fixes 'one meter' by reference to S knows that *whatever length S is a t* that length will be one meter long. (More specifically, the reference fixing definition for 'one meter' is something like: x is one meter long iff x has the same length that S has at *t*. And it is *a priori* that S has the same length at *t* that S has at *t*.)

There is a puzzle about this case, though. For it seems that the person who fixes 'one meter' in this way, though he is said to know that (25) is true *a priori*, doesn't know what length 'one meter' picks out *a priori,* and thus arguably doesn't know what proposition is expressed by (25). It is part of the story that, for all the fixer knows *a priori*, the length of S may vary, due to certain physical conditions at any given time. But suppose the length of S doesn't actually vary between the time he decides to fix 'one meter' by reference to the length of S at *t* and the time *t*; in other words at any time prior to *t*, *t*-ε, the length of S is identical to the length of S at *t*. Now, even if the fixer knows the length of S at *t*-ε (say he has measured it using imperial units) he is not in a position to assert 'S at *t*-ε is one meter' even though it is the same length as S at t, which

[18] There is an existential worry about this example and others like it. Presumably, S could be destroyed prior to *t*, in which case (25) isn't knowable *a priori* because it isn't *a priori* that S exists at *t*. This can be finessed by conditionalizing the example by prefixing it with 'if S exists at *t*'. For simplicity, I am presenting the example in its original form.

he supposedly knows *a priori*. This suggests that he does not know what length 'one meter' picks out, for otherwise he could know that S at t-ε is one meter because he knows its length.

An analogous case may make this clearer. Suppose the owner of a paint store decides to develop a new color of paint to sell, which he stipulates will be called 'color X'. He assigns the task of coming up with the new color to his assistant who will carry out the task by mixing a number of existing paints in the back room. We can assume that the owner of the store has full confidence in his assistant's judgment, so that whatever color the assistant decides upon will be sold as the new color of paint, and, hence, will be the color X. By the end of the day, say, time t, there will be several pails of the new paint on display in the front of the store. Now, what is the epistemological status of (26) for the owner of the store in this scenario?

(26) The paint on display in the front of the store at t is color X paint.[19]

It seems he knows it *a priori* because it seems that one who fixes the reference of 'color X' in this way knows, without doing any empirical work, that whatever color the new line of paint on display is, at t, it is the color X. However, what is puzzling about this case is that the owner clearly does not know *a priori* what property is picked out by 'color X'. For instance, suppose, after the assistant comes up with the new color, he presents the owner with a number of different colored swatches, among them one that the assistant decided is the new color, color X. Would the owner be able to pick out—prior to being told by the assistant—which swatch is the color X? Presumably not. For all he knows any one of the swatches, or none of them, is the color X. So there is a puzzle here about what exactly the paint store owner is supposed to know *a priori*—there is a sense in which he actually doesn't know the proposition expressed by (26) *a priori*, because he does not grasp the proposition expressed; the idea is that, in order to grasp the

[19] There is an existential worry here as well, but we can conditionalize on the existence of the paint the employee has mixed and put on display in the front of the store to eliminate this problem, so I will proceed without the elaboration.

proposition, he must grasp the meaning of the predicate ‘is color X’—in this case, it doesn’t appear that the shop owner grasps the meaning of ‘is color X’, and, thus, it doesn’t seem correct to say that he knows what proposition is expressed by (26). A more plausible suggestion, I think, for what the owner knows in this case is that the color of the paint on display at *t*—whatever color it happens to be—will be designated by the term ‘color X’. Similarly, in the case of one who fixes ‘one meter’ by reference to S, it seems more accurate to say that what he knows is not (25), but rather that the length S at *t*—whatever length that happens to be—will be designated by the term ‘one meter’. Thus, it appears that his knowledge is after all metalinguistic, knowledge that a sentence expresses a proposition that is true, and not knowledge of the proposition the sentence expresses. The metalinguistic knowledge he has isn’t something he requires empirical knowledge to support because he is the person who introduces the term in a way that guarantees the truth of the sentence. So all he has to know (existential worries aside) is that he has done so. If this is right, it clearly shows that these cases are not cases of contingent *a priori* knowledge of propositions.

Apart from this, another problem with the ‘one meter’ case is that it gives rise to the same puzzle we’ve been considering. Let us assume, with Kripke, that (25) is *a priori* for the person fixing the reference of ‘one meter’ in this way. It also appears to be contingent. For instance, suppose that, at *t*, S is 39.37 inches long (the equivalent of one meter in inches). This would clearly be a contingent truth since S might have been shorter or longer than 39.37 inches at *t*. However, notice that this consideration presupposes that (25), in this scenario, expresses the same proposition as (27).

(27) S is 39.37 inches long at time *t*.

But, while (27) is clearly contingent, it cannot be said to be *a priori* for the person fixing 'one meter' in this scenario, since for all he knows, prior to measuring S, it may be longer or shorter than 39.37 inches at time *t*. So, once again, we have a case where two sentences express the same proposition though the proposition seems to differ in its *a prioricity* relative to the different sentences that express it. We'll return to this case in the following chapter.

CHAPTER 6
THE ROLE OF THE LINGUISTIC VEHICLE

Up until this point, I have been concerned with pointing out a puzzle that arises in regards to the putative examples of *a posteriori necessity* and *a priori contingency*: for each example, the considerations which are taken to show that the example is necessary/contingent provide the resources to show that there are two sentences which express the same proposition though the proposition taken in relation to the different sentences seems to differ intuitively in its a prioricity. The upshot is that each case leads to three inconsistent claims of the following form.

(i) It is *a priori* that *p*.
(ii) It is not *a priori* that *q*.
(iii) That *p* = that *q*.

(i)-(iii) imply that there is a proposition which is *a priori* and not *a priori* (even in cases in which we relativize *a prioricity* to an individual). Thus, on pain of contradiction, one of the three claims must be rejected. In this chapter, I will argue that, in each case, rejecting either of two of the three claims rules out the example as a counterexample to the traditional view, while rejecting the third is untenable.

I initially stated the traditional view in terms of propositions: any instance of (T) is true.

(T) It is necessary that p ↔ it is *a priori* that p.

But we have seen that there are difficulties with the suggestion that the putative examples of *a posteriori* necessity and *a priori* contingency are counterexamples to the traditional view. Consider claims (a) and (b).

(a) It is *a priori* that Hesperus is Hesperus.
(b) It is not *a priori* that Hesperus is Phosphorus.

Intuitively, (a) is about a certain proposition: the proposition that Hesperus is Phosphorus, and (b) is about a certain proposition: the proposition that Hesperus is Hesperus. But this leads to problems when we consider the question whether (a) and (b) are about the *same* proposition. If

they are then we have a contradiction: (a) and (b) say that the same proposition is both *a priori* and not *a priori*. Thus, on pain of contradiction, one of the following three claims must be false.

(a) It is *a priori* that Hesperus is Hesperus.
(b) It is not *a priori* that Hesperus is Phosphorus.
(c) That Hesperus is Hesperus is the same proposition as that Hesperus is Phosphorus.

If we reject (b) or (c) then

(1) Hesperus is Phosphorus

is not, as suggested, a case of *a posteriori* necessity. As we saw in §1, the reason for holding that Hesperus is Phosphorus is necessary is that it is the same proposition as that Hesperus is Hesperus. For suppose it is not. In that case, the pair (Hesperus, Phosphorus) are distinct objects and hence it is not the case that Hesperus is Phosphorus and hence not *necessary* that Hesperus is Phosphorus. In other words, the basis for thinking that (1) is necessary entails that (c) is true. Thus, unless there is some other reason to think (1) is necessary, there is no basis for rejecting (c) and it is difficult to see what other grounds one might have for holding that (1) is necessary.

On the other hand, if (b) is rejected then (1) is not *a posteriori*. So rejecting (b) or (c) is tantamount to rejecting that (1) is both necessary and *a posteriori*.

That leaves (a). However, 'Hesperus is Hesperus' is an instance of the logical truth '(x)(x = x)', which is a typical example of an *a priori* truth—such examples are generally cited in contrast to the alleged cases of *a posteriori* identity. Rejecting (a) does not strike me as a plausible choice because it threatens to undermine the *a priori*/*a posteriori* distinction altogether; if propositions expressed by sentences of the form 'a = a' are not true *a priori* it is difficult to see how a case could be made for anything being true *a priori*.[20]

[20] Or at least, as I noted in §1, note 15, propositions expressed by sentences of the form: if a exists, then a = a.

Similar considerations present a problem for alleged cases of a priori contingency. Take (d)-(f).

(d) It is *a priori* that all actual Brooklyn residents are Brooklyn residents.
(e) It is not *a priori* that all actual Kings County residents are Brooklyn residents.
(f) That all actual Brooklyn residents are Brooklyn residents is the same proposition as the proposition that all actual Kings County residents are Brooklyn residents.

Consider (14) again.

(14) All actual Brooklyn residents are Brooklyn residents.

If (d) is false then (14) is not true *a priori*. On the other hand, if (f) is false then (14) is not contingent for the reasons it is said to be. Again, that all actual Brooklyn residents are Brooklyn residents is said to be contingent because it isn't necessary that the *actual* residents of Brooklyn, i.e., those individuals who happen to be residents of Brooklyn, are Brooklyn residents (in possible worlds talk: it isn't the case that the residents of Brooklyn in the actual world are Brooklyn residents in every possible world). Such instances of the form 'all actual Fs are Fs' are contrasted with things of the form 'all Fs are Fs' which are said to be necessary (e.g., omitting 'actual' in (14) results in a necessarily true sentence). Evidently, then, what 'actual' does is have us consider (i.e., inject into the proposition only) the actual extension of the predicate in its scope, ignoring its intension. We can see why such cases are usually presented in terms of possible worlds, because this in effect gets the same result; when we are asked to consider the Fs in the actual world we consider just those objects which happen to be Fs and evaluate claims containing 'actual Fs' accordingly. But then any predicate which is true of those objects when prefixed with 'actual' should get this result. For example, the objects picked out by 'actual Kings County residents' are the very same objects picked out by 'actual Brooklyn residents'. Thus (14) and (15) say the same thing about the same individuals.

(15) All actual Kings County residents are Brooklyn residents.

And this is just to say that (14) and (15) express the same proposition. If not, then (f) is false. But then it is not clear why one would think (14) is contingently true, since it was said to be contingent for the same reason that (15) is: because it is not necessary that the individuals picked out by 'actual Brooklyn residents'/'actual Kings County residents' are Brooklyn residents. In other words, if (14) is contingent for the reasons suggested, then (f) is true. Thus, if it is not the case that (f) is true, then (14) is not contingent for the reasons given (and, again, it is difficult to see what other reasons one might have for holding that (14) is contingent).

The other option is to reject (e). But it is not at all clear what would justify this; I do not know the majority of Kings County residents, so it is difficult to see how I could be said to know *a priori* that they are residents of Brooklyn (or residents of Kings County for that matter).

Thus, the most plausible candidates for rejection require giving up the view that (14) is a counterexample to the traditional view.

Sentences vs. Propositions

The preceding arguments assume that being *a priori* and being *a posteriori* are fundamentally properties of propositions. On this view, sentences (relative to a language) are true *a priori* only in a derivative sense—they're true *a priori* in virtue of expressing propositions which are *a priori*. But suppose this is incorrect. Suppose instead that sentences are the rightful bearers of *a prioricity*. Does this go any way towards saving the view that there are genuine examples of *a posteriori* necessity and *a priori* contingency? It does insofar as it avoids the consequence that there are propositions which are both *a priori* and not *a priori*. However, it is not clear how to explicate this suggestion in a way that would avoid the initial puzzle. What would it mean to say that being *a priori* is fundamentally a property of sentences? The idea would have to be spelled out presumably in terms of knowing a sentence to be true (or false) in virtue of its semantic and syntactic properties, for example:

> (S) A sentence s is true *a priori* (in L) iff s is knowably true (in L) in virtue of the meaning of its contained terms and their arrangement.

But now the puzzle we began with can be recast in terms of synonymy. Consider claims (g)-(i).

(g) 'Hesperus is Hesperus' is true a priori.
(h) 'Hesperus is Phosphorus' is not true a priori.
(i) 'Hesperus is Hesperus' and 'Hesperus is Phosphorus' are synonymous.

According to (S), a sentence is true *a priori* iff it is knowably true in virtue of its form and content. But if (i) is true, which, as shown, is required for the argument for the claim that 'Hesperus is Phosphorus' is necessarily true,[21] then 'Hesperus is Phosphorus' and 'Hesperus is Hesperus' do not differ in content (and they don't differ with respect to their syntactic form). So while this line avoids explicit contradiction it does not go any way towards accounting for the initial puzzle as to how two sentences which say the same thing can differ with respect to being *a priori*/*a posteriori*.[22]

Frege's Puzzle

The puzzle that arises in these cases, it seems to me, is just a variant of Frege's. Frege (1892, p. 199) was concerned with the apparent difference in cognitive significance between identity sentences which express the same proposition:

> "a = a" and "a = b" are sentences of obviously different cognitive significance: "a = a" is valid a priori and according to Kant is to be called analytic, whereas sentences of the form "a = b" often contain very valuable extensions of our knowledge and cannot always be justified in an a priori manner.

This is a puzzle about proper names. What the putative examples of *a posteriori* necessity and *a priori* contingency seem to show is that, in addition to names, the same puzzle can arise with other expressions.

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[21] In conjunction with schema (SP) from the preliminary section.

[22] Another problem with this line is that it comes close to accounting for *a prioricity* in terms of analyticity, but many of the same alleged counterexamples are said to show that analyticity and *a prioricity* are to be sharply distinguished.

Definite descriptions:

- If someone wrote the Declaration of Independence then the actual person who wrote the Declaration of Independence wrote something.

- If someone wrote the Declaration of Independence then the actual third president of the US wrote something.

Indexicals:

- This table is made of wood.
- This wood table is made of wood.
-

And predicates:

- All actual Brooklyn residents are Brooklyn residents.
- All actual Kings County residents are Brooklyn residents.

In each case, we have two sentences which apparently differ in cognitive value: one appears to be informative whereas the other appears to be trivial. (The analog to the distinction between being informative and trivial, for present purposes, is the *a posteriori*/*a priori* distinction.)

Frege considered two solutions to the puzzle, a metalinguistic solution, which he rejected, and his own solution which involved distinguishing between the referent of a term and its sense. The metalinguistic solution would interpret 'Hesperus is Phosphorus' as something like ''Hesperus' refers to the same object as 'Phosphorus'.' The problem with this line, according to Frege (1892), is that 'Hesperus is Phosphorus' doesn't appear to be about terms but rather about objects—as he points out, the truths expressed by such examples are often considered great discoveries about the world. His own solution was to explain the nontrivial (*a posteriori*) aspect of such examples by positing distinct senses associated with the names flanking the identity sign; for example, while the referent of 'Hesperus' and 'Phosphorus' may be one and the same, 'Hesperus is Phosphorus' may be informative (*a posteriori*) because it is possible to associate distinct senses with those names and not be in an epistemic position to see that they track the

same object—for instance, if one thinks of Hesperus as the first visible star in the night sky and Phosphorus as the first visible star in the morning sky then, on this account, it doesn't follow that he knows *a priori* that 'Hesperus is Phosphorus' is true.

As we have seen, neither solution is compatible with the view that the examples considered in this paper are genuine cases of *a posteriori* necessity and *a priori* contingency. Earlier, we noted that Frege's solution does not work because it either changes the modal status of the example, making it compatible with (T), or it leads to the same puzzle in a new form (§§ 1-2). The metalinguistic solution, on the other hand, is problematic for the reason Frege pointed out: on the face of it, such examples do not appear to be about expressions. Moreover, the reasons given for the suggested modal status of each example rule out the metalinguistic solution: 'Hesperus is Phosphorus', for example, is said to express a necessary truth because it is an instance of the identity thesis which, as Kripke explicitly points out, is not a linguistic thesis; 'all actual philosophers are philosophers' is said to be contingent because it is about individuals who happen to be philosophers; 'S is one meter at *t*' is said to be contingent because it is about an object which happens to be one meter long at *t*, and so on.

However, while the modal status of such examples does not appear to be language dependent, the epistemic status does; the examples seem to be examples of the contingent *a priori* or necessary *a posteriori* as the result of failing to separate what is known about the proposition from what is known about the sentence expressing it, i.e., about its the linguistic vehicle. The considerations which are supposed to show that a given example is necessary/contingent entail that there are (at least) two sentences which express the same proposition yet in relation to each of which the proposition appears to differ with respect to a prioricity. If two sentences express the same proposition, then any difference in what we can

know when we are thinking of a proposition in relation to one or the other must rest on something made available or not by the sentences themselves. Thus, if it is true that each example has the modal status it is said to have, then the linguistic vehicle appears to be playing a role in the suggestion that such examples are *a priori*/*a posteriori*. Consider again some of the examples of the *a priori* and *a posteriori* that we discussed.

(1) Hesperus is Phosphorus (*a posteriori*)
(1b) Hesperus is Hesperus (*a priori*)
(2) water is H_2O (*a posteriori*)
(2b) Water is water (*a priori*)
(3) All actual Brooklyn residents are Brooklyn residents (*a priori*)
(3b) All actual Kings County residents are Brooklyn residents (*a posteriori*)
(4) If someone wrote the Declaration of Independence then the actual person who wrote the Declaration of Independence wrote something (a priori)
(4b) If someone wrote the Declaration of Independence then the actual person who was the third president of the US wrote something (*a posteriori*)
(5) Actually, John Kerry is a Massachusetts senator (*a posteriori*)
(5b) John Kerry is an ext(John Kerry, Ted Kennedy) (*a priori*)

There is a theme here: each example that is said to be *a posteriori* contains *distinct* expressions on either side of the copula (or in the case of (4b) contains distinct terms in the antecedent and consequent), whereas each example which is said to be *a priori* contains *identical* expressions on either side of the copula (or, in (4) contains identical terms in the antecedent and consequent). This is the only linguistic difference between each pair. Thus, if, as suggested, each pair expresses the same proposition, then it appears to be this *linguistic* fact that is motivating the epistemic attributions in the alleged cases of *a posteriori* necessity and *a priori* contingency.

Two cases we looked at appear to be exceptions to this:

(19) If Earth exists then Earth is a physical object *(a posteriori)*
(25) S is on meter long at time *t* (*a priori*)

However, notice that in both of these examples what is *a priori*/*a posteriori* is relative to a certain individual or group of individuals. (25), for instance, is supposed to be *a priori* for the

person who fixes ‘one meter’ by reference to S at *t*. Presumably, (25) is not *a priori* for anyone else (unless he or she is privy to the decision to fix ‘one meter’ in this way). But what is it that precludes others from knowing (25) to be true *a priori*? It can’t simply be that they don’t know what ‘one meter’ *means*, because, assuming that the meaning of ‘one meter’ is the length designated by that expression, the person who fixes ‘one meter’ in this way does not know what the term ‘one meter’ means either, prior to *t*—recall that it is part of the story that the length of S may vary prior to *t* and, for all this person knows, the length designated by ‘one meter’ may be longer or shorter than the length of S at some time t-ε, even if he knows the length of S at that time. Suppose someone else decided, independently, to create a system of measurement, say the “shmetric system,” and fixed ‘one shmeter’ by reference to the length of some other object, S_2 at *t*. In such a case, following Kripke’s line of reasoning, (25*) is *a priori* for this person.

(25*) S_2 is one shmeter at *t*.

But now suppose that the lengths of S and S_2 are identical at *t*. In this scenario, ‘one meter’ and ‘one shmeter’ designate the same length, but the metric user is not in a position to know *a priori* that (25*) is true, nor is the shmetric user in a position to know *a priori* that (25) is true. One way to account for this would be to say that (28) is not true *a priori* for either person.

(28) One meter is one shmeter

But, by hypothesis, (28) expresses the same proposition as (29) and (30), which are (presumably) true *a priori*.[23]

(29) One meter is one meter
(30) One shmeter is one shmeter

[23] At the very least, (29) is true a priori for the metric user and (30) is a priori for the shmetric user.

So it appears the linguistic vehicle is playing a role in this case as well. And notice that (28)-(30) exhibit the same characteristics as the earlier examples: (29) and (30), which are true *a priori*, contain *identical* terms flanking the copula whereas (28), which is said to be true *a posteriori* contains *distinct* terms flanking the copula.

The same can be seen in the case of (19).

(19) If Earth exists, then Earth is a physical object.

Recall the Planet-X thought experiment. In that scenario 'Earth' and 'Shmearth' refer to the same object, yet, whereas (19) is supposedly true *a posteriori*, (20) is true *a priori* (for the denizens of Planet-X).

(20) If Shmearth exists, then Shmearth is a physical object.

One way to explain this would be to say that the people on Planet-X don't know that (31) is true *a priori*.

(31) Shmearth is Earth

But, by hypothesis, (31) expresses the same proposition as (32), which is true *a priori* (at least for those people on Planet-X).[24]

(32) Shmearth is Shmearth

So it seems the linguistic vehicle is playing a role in this case too. And, again, we see the same characteristic: the *a priori* example, (32), contains *identical* terms, whereas the *a posteriori* example, (31), contains *distinct* terms.

All this strongly suggests that the putative examples of the necessary *a posteriori* and contingent *a priori* are the result of failing to recognize the role the linguistic vehicle plays in the suggested epistemic status of such examples. If this is right then we have a solution to the initial

[24] And, again, barring the existential worry.

puzzle as to how two sentences can express the same proposition/be synonymous yet differ as to being *a priori*/*a posteriori*: the epistemic status of such examples is not wholly based on knowledge of the proposition expressed/the meaning of the sentence, but rather it includes some metalinguistic knowledge (or lack thereof) regarding the contained terms. The way one comes to know the proposition expressed by such sentences is mediated by the linguistic vehicle. Take an example.

(1) Hesperus is Phosphorus
(1b) Hesperus is Hesperus

We can know that the proposition expressed by (1b) is true because the sentence expressing it is logically true. But logical truth is a property of sentences and is recognized by attention to sentence form. So knowledge that the proposition is true rests not just on grasping the proposition but also on knowledge about the linguistic vehicle used to express it. (1) expresses the same proposition and we grasp it as well, but the aid that the linguistic vehicle in (1b) gives to knowing it is true is missing here. So what we know in the case of (1b) is essentially in part linguistic. Hence, there is no knowledge of the truth of the proposition directly in these cases.

Conclusion

In this paper, I have been concerned with pointing out a problem that is common to the putative examples of the necessary *a posteriori* and contingent *a priori*. I began by noting a puzzle that arises in each case: the considerations which are taken as evidence that the example is necessary/contingent leads to the view that there are two sentences which express the same proposition which differs as to being *a priori*/*a posteriori* when considered as expressed by one and the other. On the assumption that propositions are the bearers of *a prioricity,* which is implicit in the traditional view, this leads to contradiction: there is a proposition, *p*, such that it is *a priori* that *p* and it is not *a priori* that *p*. I argued that the best way to avoid this is by denying

that such examples are counterexamples to the traditional view. Finally, I noted a characteristic exhibited by all such examples which suggests an explanation for the initial puzzle: the modal status of each example is based on the proposition expressed whereas the epistemic status is not; instead, it appears that the linguistic vehicle is playing a role in the view that such examples are *a priori*/*a posteriori*. Thus, in these cases, there is no one thing that has both the alleged epistemic and modal statuses which are to provide a counterexample to the traditional alignment of *a prioricity* and necessity

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BIOGRAPHICAL SKETCH

Shawn Burtoft was born on July 9, 1973 in Sarasota, Florida. He relocated to Marion, Virginia, at age 12 and graduated from Marion Senior High School in 1991. He earned his B.S. in philosophy from East Tennessee State University in 2006.

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