

# Analyticity in Externalist Languages

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## 1 Introduction

In this paper I am going to present, and argue for, a different way of thinking about the analytic/synthetic distinction (ASD). The account is intended to apply indifferently to both natural and artificial languages, but it is rather complicated and it makes reference to some unfamiliar entities. My strategy in arguing for the account will thus be Russell’s strategy from the famous “On Denoting”: I will present a number puzzles about analyticity, and argue that my view solves them all.

The puzzles arise because philosophy of language has come a long way since the height of the debate between Quine and Carnap. For one, we are now very sensitive to a number of phenomena—such as direct reference, semantic externalism and indexicality—which were not as well understood then as they are now. There is some awareness in the post-Quinean literature—particularly in work by Hilary Putnam, Nathan Salmon, Paul Boghossian, and Timothy Williamson—that these phenomena cause *new* problems for the already beleaguered ASD. [Putnam, 1962] [Kripke, 1980a] [Salmon, 1993] [Boghossian, 1996] [Williamson, 2008] But if the central claim of this paper is correct, then the analytic/synthetic distinction—properly understood—is compatible with all these new developments.

I begin by presenting a simple, traditional account of the ASD, and then in part two I argue that this traditional account must confront four puzzles. In part three I present the new view, and in part four argue that it resolves all of the puzzles. I conclude that the older view should be given up in favour of the new.

## 2 Analytic Sentences

The analytic/synthetic distinction is often introduced with the following story: there are two factors that go into making many sentences true, the way the world is, and what the sentence means. The sentence *grass is green* for example, is true in part because grass has the colour it does and in part because the means what it does. If grass were red, or if ‘grass’ meant what ‘snow’ means, then the sentence would be false. Sentences which fit this model are called *synthetic*.

Analytic sentences are those for which the meaning alone—independently of the input of the world—is sufficient to make them true. Examples given may include *all bachelors are unmarried*, and *triangles have three sides*.

For many, the basic idea of an analytic sentence—if not the details or defence of any particular philosophical account of analytic sentences—is, or once was, extremely intuitive. If analyticity is explained as above students often have the feeling of being reminded of something which at some level they already knew. One explanation for this might be that they were familiar with the ASD when they lived among the forms. Another—more plausible to my mind—is that the existence of analytic sentences is a natural consequence of an intuitive folk theory of meaning—one which Frege and Carnap helped to formalise and clarify, and which Quine and his followers eventually rejected.

The folk theory of meaning, as I see it, goes like this: linguistic expressions (both entire sentences and subsentential expressions like individual words) have meanings. Meanings play three roles. First, meanings determine—in conjunction with the way the world is—the extension of the expression, for example, its referent in the case of a singular term, or the set of objects (or n-tuples) which satisfy the expression in the case of a predicate, or the truth-value in the case of a sentence. Second, meanings are what speakers have to know about the expression in order to count as understanding it. For example, my brother counts as understanding the word "alacrity" if he knows *what it means*. Third, the meanings of expressions are what the expression contributes to *what is said* by a sentence containing the expression. For example, the English sentence "muscle fibres are elastic" says that (more fancily put: "expresses the proposition that") muscle fibres are elastic, but if the word "elastic" had meant what the word "rigid" means, the sentence would have said something different, namely, that muscle fibres are rigid. Thus the meaning of the sentence-part contributes to the meaning of the sentence as a whole.

I call this a folk theory, but in calling it such I mean neither to suggest that the folk would explain it in this somewhat technical language, nor that the conception of meaning it encapsulates is limited to the folk. Many of us begin our theorising about language—and everything else—with common sense, and the gist of this picture is apparent in the work philosophers as diverse as Immanuel Kant, Gottlob Frege, Rudolf Carnap, Jerrold Katz, David Lewis and Frank Jackson.

With this folk picture in the background, the traditional account of analyticity follows easily, and so has been rediscovered time after time. Suppose we decide to add a new word to our language, say "mimsy". In order to introduce a new *word*—as opposed to merely drawing attention to a string of letters or sounds—one has to give it a meaning. One way to do this is by providing a synonym, i.e. word which already has the meaning which we wish to give to "mimsy". Let's use *floaty* and we'll introduce *mimsy* by means of the following definition: *something is mimsy if and only if it is floaty*. Assuming that everything has gone smoothly, *mimsy* now means what "floaty" means. Given our folk theory of meaning, this has three important consequences. First, we know that on the folk theory, meaning, together with the way the world is, determines

extension. So, relative to the actual world, it will be the case that the words *mimsy* and *floaty* have the same extension. This of course has the consequence that *every mimsy thing is floaty* is a true sentence. It seems as if the truth of that sentence is a consequence of defining *mimsy* to have the same meaning as *floaty*, and hence it is not unnatural to say that the sentence is **true in virtue of meaning**.

But we can draw stronger conclusions than this. As meaning determines extension, relative to *any* possible world the words ‘mimsy’ and ‘floaty’ will have the same extension (since they have the same meaning) and hence “every mimsy borogrove is floaty” will be true relative to every possible world, that is, it will express a **necessary** truth. Third, and perhaps a little less surely, we notice, given thesis (1) of the folk theory, that anyone who understands our new word ‘mimsy’ has to know what it means. This is also true of ‘floaty’ of course. But then, isn’t it reasonable to assume that someone who understands both of these words will be able to *tell* that they mean the same thing? If so, they they will be able to go through the reasoning we went through above and come to the conclusion that the sentence “all mimsy borogroves are floaty” is true. Notice that if they can do that, they can come to know this without going out and examining borogroves to see whether or not they are floaty, but rather just by thinking about what “all mimsy borogroves are floaty” means. There is, of course, some precedent for calling this kind of justification *a priori*.

Such sentences seem special, and it isn’t unnatural to mark that by calling them *analytic*. On this account analytic sentences are true in virtue of meaning, and because of that, they also have the property of being necessary and a priori. The account is consistent with those of Kant, and with the linguistic theories of necessity and a priority espoused by the positivists.<sup>1</sup> But it is also an account that follows very quickly and naturally from the folk theory of meaning that I described.

The account that I have presented here is a very stripped down account. Most authors make the account more specific by supplementing it with a story about how to characterise the sentences which are truth in virtue of meaning (i.e. those in which the concept expressed by the predicate concept is contained in the concept expressed by the subject concept (Kant), or those which follow from the logical axioms supplemented with meaning postulates (Carnap), etc.) and at different times the account has been burdened with various other theses about analyticity. For example, some authors hold that analytic truths must be not only a priori, but obvious, certain or indubitable, that they must be really ‘about language’ and not about the world at all, that they fail to state genuine facts. But since this traditional conception of the analytic-synthetic distinction is my *target* in this paper, I want to consider only the most plausible core of the account, and not weaken my case by addition potentially detachable additional theses. Hence I shall not assume that analytic truths have any additional

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<sup>1</sup>This account does, admittedly, differ significantly from Frege’s proof-theoretic conception of analyticity, and given the significance of Frege’s work on the course of the idea of analyticity in philosophy, this is not something to be dismissed lightly. Yet I think it is fair to say that Frege’s conception of analyticity is something of a historical anomaly.

properties, such as obviousness or certainty.

I can summarise the key points of this section very briefly as follows:

According to the folk-theory of meaning, the meaning of an expression is:

- what a speaker has to know to understand the expression
- what an expression contributes to the proposition expressed by a sentence containing it
- what determines the extension of the expression, if it has one.

Acceptance of these ideas about meaning tends to encourage acceptance of analyticity and the view that analytic truths are:

- true in virtue of meaning
- necessary, because they are truth in virtue of meaning
- knowable a priori, because they are true in virtue of meaning

### 3 Five Puzzles

I will now present four puzzles for this straight-foward account of analyticity.

#### Puzzle 1: Directly Referential Names

To say that a name like *Hesperus* is directly referential is to say that which object it will refer to (its referent) is not determined by the content of the name, i.e it is not determined by the meaning which the expression contributes to the meaning of the sentence containing it. This is not to say that it is not determined by *anything*, which would be rather magical, but rather that it is determined by a different kind of thing—perhaps a causal-historical chain—which is not considered a part of the the proposition expressed by the sentence. Such names are often taken to contribute the referent itself to the proposition, so that sentences containing directly referential names express Russellian propositions, which may contain ordinary objects—as opposed to special meanings or senses—as parts. The proposition expressed by *Hesperus is bright* for example, if *Hesperus* is directly referential, will contain the planet Venus.

The problem for the ASD is that true identity claims using directly referential names do not fit cleanly into either the class of analytic sentences or the class of synthetic sentences. There is a *sense* in which the sentence is true in virtue of meaning, namely, the referent of such names is not a extra-semantic, empirical matter but rather a part of their semantics. So given their meanings *Hesperus* and *Phosphorus* have to refer to the same thing. Then given the meaning of ‘is’ (the ‘is’ of identity) the sentence must be true. This, along with the fact that the sentence expresses a necessary truth, and indeed, seems to be necessary because it is true in virtue of meaning, tempts us to classify the sentence as analytic.

There are several problems with such a classification. First, the sentence is not *intuitively* analytic—competent speakers are unlikely to unreflectively assign it to the ‘analytic’ list when asked to sort groups of sentences. Second, whether or not the sentence expresses an a priori proposition, it clearly lacks something of the epistemic property that we attributed to *all mimsys are floaty* in the previous section; competent speakers cannot, for example, learn that the sentence is true just by thinking about it and without getting out their telescopes, or consulting an astronomy text. Third, unlike, say *Hesperus is Hesperus*, *Hesperus is Phosphorus* is not plausibly—no matter how rich one’s logic—a logical truth. This is a worry because analyticity is quite plausibly regarded as a kind of natural language analogue to formally defined logical truths. And finally, though the sentence may be true in virtue of meaning in one sense, it isn’t quite the sense in which *all mimsys are floaty* was true in virtue of meaning. For example, with the later, we can say, ‘no matter what the extension of ‘mimsy’, the sentence must be true (as ‘mimsy’ always gets the same extension as ‘floaty’, because their extensions are determined in the same way.) That couldn’t be said truly of *Hesperus* and the sentence *Hesperus is Phosphorus*.

Thus our first puzzle is this: is a true sentence which uses two directly referential names to state an equality (such as ‘Hesperus is Phosphorus’) analytic? There seem to be clear objections to both affirmative and negative answers, and that suggests that there is something wrong with our concept of analyticity.

## Puzzle 2: Semantic Externalism

The sentence *all cats are animals* differs in a number of crucial ways from *Hesperus is Phosphorus*. First, it is rather more plausible that *all cats are animals* is analytic and second, it is not an identity sentence, since it does not contain names, and the relation it expresses is non-symmetric (it is not the case that all animals are cats.)

However, Putnam argues that the sentence *all cats are animals* could be false, which fits ill with the picture of analyticity I laid out above. [Putnam, 1962] His argument is developed over three cases. In the first, we consider what we would say if it were discovered that some of the creatures we had been calling ‘cats’ are really robots. We can fill in some of the story about what happens: for example, someone’s feline familiar, Munkustrap, is in a nasty accident, and the vet, upon examining the body, discovers that the inside is all metal gears and switches. I think it is fairly clear that in such circumstances we would not hold that the sentence *all cats are animals* is false, rather, we would say that Munkustrap turned out not to be a cat after all, and hence he couldn’t be a counterexample to the claim that cats are not animals.

In the second case we suppose that in 1950 all the cats on earth, and indeed, everywhere else, are killed and replaced with cat-like robot replicants. We might imagine that the real purpose of these replicants is to report back to their masters on Mars and inform them about life on earth—they are cat-like spies. The cat-replicants are quite sophisticated as robots go; they contain blood and

living tissue, such that no-one has yet noticed the switch. Even under these circumstances, it seems clear that that *all cats are animals* would still be true. It is simply *trivially* true because there are no cats anymore. Why don't the robots count as cats? Perhaps the reason is this: in order to satisfy the predicate 'cat', one has to bear a certain relation (perhaps a similarity relation, but perhaps a causal relation) to the kinds of things we originally called *cats*, the initial sample that was used for introducing the word. On this scenario, the initial sample (since that would have been more than 50 years ago) can be assumed to have contained only animal-cats. The robot cats are not related in the appropriate way to objects that were around at the time of baptism, and so they do not fall under the predicate *cat*.

In the final, crucial, case we imagine that cats have been replicant-spies *all along*. There were never any animal cats, and all human acquaintance with cat-like objects has really been with sophisticated robot spies from Mars. Putnam points out that were we to discover this fact we would say, not that there were no cats, but that cats have turned out to be very different from what we thought. Unlike dogs, and horses and koalas, cats turned out not to be animals, but sophisticated spy robots. And hence the sentence *all cats are animals* would be false.

This, of course, fits ill with the intuition that the sentence is analytic, for according to the traditional picture, analyticity is sufficient to guarantee necessary truth. Moreover it is hard to maintain that a claim is a priori when its truth depends on an a posteriori claim such as that, at some time in the past, there were cats that were animals, and not robot spies from Mars.

### **Puzzle 3: Minimalism about Semantic Competence**

One of the main themes of post-Quinean 20th century philosophy of language was the idea that linguistic competence might not require knowledge of a criteria for uniquely distinguishing things that fall into the extension of an expression. For example, Putnam suggested that ordinary competent speakers of English who use the words 'elm' and 'beech' need not be able to distinguish elms from beech trees. [Putnam, 1973]

Once this requirement for semantic competence is gone, it leaves open the possibility that very little is required for semantic competence. Contemporary Millians suggest, for example, that all that is required for someone to be competent with a name like *Gödel* is to hear it from someone else who is competent with it and intend to use it with the same referent as they did. The ideas of reference via causal-historical chains, division of linguistic labour, and semantic deference provide models of language on which users of an expression need not have knowledge of anything (far less a meaning) that would uniquely determine the extension of the expression, and so they tend to allow for very minimal requirements on semantic competence. [Kripke, 1980b] [Soames, 2001] [Putnam, 1973] [Burge, 1986] [Burge, 1979]

The lowering of the standards for semantic competence threatens to erode the epistemic import of analyticity. If, as the picture of analyticity suggested

by the folk picture suggests, all analytic truths can be known on the basis of what you have to know to be semantically competent, then, more or less, the less you have to know to be semantically competent, then fewer truths will be analytic.

For example, suppose that the folk theory is correct for the name ‘Ali’, and that competent speakers must be able to identify the referent via some uniquely identifying cluster of properties associated with the name. Then I might need to know, say, that Ali was the boxer who beat Foreman on such and such a date in order to be semantically competent. I would then be able to conclude on the basis of my semantic competence alone that Ali beat Foreman on such and such a date. But if all I have to do in order to be competent with ‘Ali’ is, say, know that it is the name of a human being, and intend to use the name as everyone else does, then I *won’t be* in a position to conclude, on the basis of my semantic competence alone, that Ali beat Foreman; my stash of analytic truths will be smaller.

Timothy Williamson argues for an even more acute version of this problem, according to which there is no *particular* thing that one is required to know in order to be semantically competent. He uses this view of semantic competence to argue that no sentences have the epistemic properties which the traditional view attributes to analytic sentences:

A complex web of interactions and dependencies can hold a linguistic or conceptual practice together even in the absence of a common creed that all participants at all times are required to endorse. ...although disagreement is naturally easier to negotiate and usually more fruitful against a background of extensive agreement, it does not follow that any particular agreement is needed for disagreement to be expressed in given words. [Williamson, 2008, 125]

So puzzle 4 is this: if we accept some form of minimalism about semantic competence, how we can avoid the conclusion that no sentence counts as analytic?

#### **Puzzle 4: Indexicality**

The fourth puzzle arises when we consider sentences containing indexicals, such as *I* and *now*. Intuitively, a sentence containing an indexical can be used to say different things in different contexts, because, given different contexts, the indexical expression contributes something different to the proposition expressed by the sentence. For example, when GR utters *I am going swimming* she expresses the proposition that GR is going swimming, and when RM utters the same sentence, he expresses the distinct proposition that RM is going swimming. What makes this possible is that the contribution made by *I* to the proposition expressed by the sentence containing it changes as the context changes. In the case of pure indexicals like *I*, *here* and *now* the contribution made by the expression is systematically determined by a rule which determines a function

from contexts to propositional contribution. In these cases we can, for the sake of argument, adopt Kaplan's suggestion that the rule for *I* is that it always contributes the agent of the context (i.e. the person speaking or writing the sentence), the rule for *here* is that it always contributes the place of the context and the rule for *now* is that it always contributes the time of the context.

The indexical-containing sentence *I am here now* is another example of a sentence—like *Hesperus is Phosphorus* and *all cats are animals* that does not fit happily into the traditional analytic or synthetic camps. *I am here now* seems to be true in virtue of meaning, and moreover, it seems to be true in virtue of meaning in just the kind of way traditional analytic sentences are (and not in the odd way that *Hesperus is Phosphorus* is true in virtue of meaning.) That is, the referent of *I* and the referent of the pure indexical *here* are determined in such a way by the meanings of those expressions (the rules that determine propositional contribution) that given what is meant by *is* in this context (the *is*-of-predication this time) the sentence will be true no matter what *I* and *here* end up picking out. Moreover, the sentence is as plausibly a priori as any other analytic sentence and its truth seems to be knowable on the basis of semantic competence alone.

However, on the traditional conception of analyticity, all analytic sentences express necessary truths, and the proposition expressed by the sentence *I am here* is often contingent (unless expressed, by say, God, if God is necessarily in heaven.) In particular, GR needn't have been here, she could have gone home hours ago. Other sentences which can be used to set up this problem include *The actual postmaster general is the postmaster general* and *dthat[the shortest spy] is the shortest spy*. Both are indexical containing sentences that are apparently true in virtue of meaning and a priori, but neither expresses a necessary proposition.

## The Alternative Account of the ASD

It seems to me that the four puzzles above arise from of conceptions of the way language works that are simply inconsistent with the folk picture of meaning. Take direct reference. If the content of *Hesperus* is just its referent, and reference-determination must be non-circular, which it surely must be, then it is false to say that the content of *Hesperus* determines its referent: nothing determines itself. Rather, of course, on the direct reference picture the referent is determined by something else (such as a causal chain) which may not deserve the name of 'meaning' and which is not part of the expression's contribution to the proposition expressed by the sentence.

In the externalist examples I gave, the state of the environment when the expressions were introduced was crucial to the resulting meaning of the expression. In this respect they are a lot like names on the causal theory of reference. Suppose we told a story which involves, not stealing the incompleteness theorems after they were proved, but the Gödels' biological baby being replaced with an alien spy baby whilst still in the womb. When she delivers Frau Gödel says "Es

ist ja wunderschön! Ich nenn' es natürlich "Gödel", wie uns." (He's beautiful! I'll call him "Gödel", of course, like us.) Alien Spy Baby grows up and proves the incompeteness theorems himself, but when one of his graduate students utters "Gödel isn't a human being", he says something true, because in this case "Gödel" refers to the alien, just as *cats* picks out robots in case three; we have taken the switch back so far that we have changed the *context of introduction* for the expression. Names are rigid-designators, so they do not change their referent across different possible worlds. They are not like *I* or other indexicals, so their referent is not sensitive to different contexts of utterance. But they *can* be sensitive to context of introduction, and expressions like *cats* (and *water* and *heat*) are similar in this respect. If *cats* was introduced to refer to our animal familiars, then it is satisfied by objects that bear a certain relation of similarity to those first animals. But if it was introduced to refer to alien robot spies, then it is satisfied by objects which bear a certain similarity relation to those robots. But on the old folk theory, the extension of an expression is entirely determined by its meaning and the state of the world *being talked about* (and when we utter *cats are animals* we are talking about the way the world is right now.) What the expression was *first* used to refer to can only be of historical interest. Hence again, semantic externalism conflicts with the folk theory.

Liberalism about semantic competence denies that what speakers must know to understand an expression is something that also determines the expression's extension. This is in direct conflict with the part of the folk theory that identifies these two things.

And finally, indexical expressions are expressions whose content varies with context, though the thing that determines their referent (Kaplan's character) does not. It follows that those two things cannot be identical, which is again in conflict with the folk picture.

The folk picture cannot allow for the ubiquitous phenomena of direct reference, externalism, indexicality or liberalism about semantic competence. So that picture is inadequate, and it should not be too surprising that the account of analyticity which it supports is also inadequate.

However, one might wonder whether accommodating these phenomena requires a *complete* rejection of the folk picture; at times Putnam seems to suggest that it is not that the folk view is wrong, so much as that it only applies to a restricted type of expression (e.g. to expressions like *chair* and *bachelor* and not to *water*.) If so, then we can imagine a theory according to which there were several ways in which expressions could work, and one picture of the way meaning worked was right for certain expressions, and another for others. This is a view that reminds me strongly of the famous passage from the *Investigations* in which Wittgenstein writes:

Think of the tools in a tool-box: there is a hammer, pliers, a saw, a screw-driver, a rule, a glue-pot, glue, nails and screws.—The function of words are as diverse as the functions of these objects.  
[Wittgenstein, 1953, §11]

Wittgenstein's view is a much more radical one than the one I am entertaining

here, yet the metaphor is a useful one: even within the part of language that is used for the canonical tasks of asserting, describing and naming, we can think of different expressions as having different kinds of uses: names can be the hammers, the definite descriptions the paints etc. small wonder that they have different semantic, metaphysical and epistemic properties when they are used for such different things. If we were to adopt this rough picture, we might stage a rescue of the ASD by claiming that it only applies to certain parts of language—the parts where the traditional story about meaning is correct—and it has no place where there are indexicals, names, natural kind terms etc or where phenomena like semantic deference and division of linguistic labour have taken a hold.

This conservative approach would be a mistake. The first reason is that there are analytic-sentences which contain, and even rely upon, the unfolky phenomena, such as *all red water is water* and *I am here now*. And second, there is reason to doubt that there really are *any* expressions that function as the naive folk view holds that all expressions function, especially as liberalism about semantic competence has a tendency to leak all over the language. Williamson provides numerous other examples to support the thesis that liberalism about semantic competence is not limited in its scope to a particular subset of words. [Williamson, 2008, ch4]

All this, I think, makes the idea of an account analyticity that fits better with these new phenomena a worthwhile one, and with this much said to motivate it, I'll present the approach and show how it handles our five problems.

## 4 The New Analytic/Synthetic Distinction

In presenting the account, I will present, not just one definition of analyticity but two, and these two definitions are *not* co-extensional. Rather, the first is an approximation to analyticity expressed using more or less familiar tools, such as possible worlds and functions from contexts. The details of this definition will be explained below, but the basic idea is that the meanings of analytic sentences determine functions that return the value *true*, regardless of the context in which they are uttered and and no matter what the world was like when they were introduced.

But modal definitions of semantic notions have had a tendency to fall short; the idea of a singular term that is directly referential, for example, is not completely captured by saying that a directly referential expression refers to the same object with respect to every possible world, since there are also non-directly referential expressions which refer to the same object with respect to every possible world, such as *the sum of 2 and 2*. To better capture the idea of a directly referential term, we follow Kaplan in pointing to “a metaphysical picture” on which directly referential terms are those whose propositional-contribution and referent are identical. [Kaplan, 1989b] I will show that the modal definition of analyticity above runs into similar problems, and so the second definition of analyticity will exploit the metaphysical picture that un-

derlies and explains the distinctive (but not uniquely identifying) modal profile of analytic sentences.

## 4.1 A Different Approach to Meaning

To avoid the charge of ad hocness, I will begin by looking at a picture of language that can replace the folk view. Instead of assuming that expressions have a single thing—their meaning—that determines extension, is known to speakers and contributed to propositions, we will allow that these three roles may be played by different things. If there may be three different things there, it behoves us to have three different names for them, and so in place of the more general word ‘meaning’ I will use the following technical terminology: reference determiner, content and character.

The *reference determiner* of an expression is what determines the function from the way the world is to the extension of the expression. Though the expression *reference determiner* may be new and strange, the idea that it stands for is old and familiar: when expressions have referents, that fact is not a miracle; *elastic* has the extension it has because of what it means (its reference determiner). *Frank* has the referent it has because it was *that person* who was the referent of *my baby* when his mother said “I’ve decided to call my baby, *Frank*”. The usual facts about the reference-determining aspect of meaning all still hold; if two expressions have the same reference determiner, they have the same referent with respect to all possible worlds. Hence if expression *A* applies to object *c* at  $w_1$ , and *B* does not, then the reference determiners of *A* and *B* must be different.

The *content* of an expression is what it contributes to the proposition expressed by a sentence containing it. This is the notion of content which might be familiar from Kaplan [Kaplan, 1989b].

Kaplan used *character* to refer to an aspect of meaning that was *both* what was known to speakers and what determined reference, I will reserve it for the former. Hence the character of an expression is what a speaker has to know to count as understanding the expression.

The new picture allows for content, character and reference determiner to come apart, but there is no *prohibition* against two or more roles being played by the same thing. Just as in some countries the head of the government is the same person as the head of state, so it may be that, say, with some expressions—for example, Kaplanian indexicals—reference determiner and character coincide, i.e. that speakers competent with the expression know how the referent is determined from a context.

Once we have replaced the unified folk notion of meaning with these three notions, one might wonder what has become of *truth in virtue of meaning*. I contend that what has been called *truth in virtue of meaning* is really truth in virtue of reference determiner.<sup>2</sup> One reason for this is that truth in virtue of

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<sup>2</sup>One way to think about the kind of claim I am making here is this: there are real, intuitive phenomena—of which analyticity is one—out there that there that we, as philosophers, are aware of and attempt to characterise. This is difficult and even the best of philosophers will

reference determiner fits well with a number of the stories that we tell about analyticity, and even where it doesn't have the properties that earlier philosophers have attributed to analyticity, it is possible to see why those philosophers thought that it did.<sup>3</sup>

At the beginning of this paper I noted that there are two things that go into making a synthetic sentence true—what it means, and the way the world is. It is less commonly noted that this can be generalised to sub-sentential expressions and their referents. The expression *the longest book in the British Museum* has the referent it has in part because of what it means, and in part because of the way the world is; had the description meant what *the longest sarcophagus in the British Museum* means, or had there been a different set of books in the British Museum, the description could have picked out a different object. Similarly, for *bachelor*.

Things get more interesting when we consider indexicals and names. Suppose we stipulate that by 'meaning' we mean content. Then, the story fails. Whatever possible world we are considering, *Hesperus* refers to the same object, since *Hesperus* is a rigid-designator. The same goes for the word *I*. Moreover it would be pragmatically unacceptable to say that by changing the content of *Hesperus*, or the content of *I* one could change the referent: in both these cases the content *is* the referent.

In the case of indexicals there is an obvious alternative way to proceed: we specify that by 'meaning' we mean not content, but reference determiner, and by *world* we mean not a possible world, but a context of utterance. On this construal it is straight-forwardly true that by varying either the meaning or the world, we can vary the extension of the expression: for example, had you been

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often misdescribe the phenomenon in which they are interested, and attribute properties to it that are really properties of something else, or properties of nothing. 20th century philosophy of language provided us with a surprising thought, namely that the *reference determiner* of an expression had often been misdescribed as the *meaning* of an expression, whereas in fact it is often—say in the case of names and natural kind terms—something that is distinct from the expression's meaning, because it is neither known to speakers nor a part of what is said. I merely extend this view : truth in virtue of reference determiner has often been misdescribed as truth in virtue of meaning. Still, it is truth in virtue of reference determiner that is the phenomenon that is really of interest.

<sup>3</sup>Occasionally I have heard the suggestion that since there are four different kinds of meaning on my view, there might be four different kinds of truth in virtue of meaning. Perhaps, but only truth in virtue of reference determiner is the important one for analyticity. One argument against taking truth in virtue of meaning to be truth in virtue of *character* is Williamson's: since characters have turned out to be minimal or non-existent, very little is true in virtue of character, and so that approach does nothing to account for the familiar notion of analyticity—all we're left with is an error theory. An argument against taking truth in virtue of meaning to be truth in virtue of *extension* is that varying the extension of an analytic sentence appears to have no effect on its analyticity: *all bachelors are unmarried* comes out analytic independently of which people are bachelors: a few more people marrying or having sex-changes will not affect the analyticity of the sentence. An argument against taking truth in virtue of meaning to be truth in virtue of content is that in cases of analytic sentences where the content and reference determiner of their component expressions come apart, such as with analytic sentences containing indexicals, varying the content seems to have no effect on the analyticity of the sentence: *I am here now* is analytic whether it expresses the content that GR is at work, or whether it says RM is at home.

the agent of the context (varying the world), then *I* would have referred to you, instead of to me, and had the reference determiner of *I* been *the hair-colour of the agent of the context* (varying the meaning), then *I* would have referred to the colour of my hair, and not to me.

This strongly suggests two things. First, that the *meaning* in the story told to introduce analyticity is reference determiner, as opposed to say, content, referent or character, and second, that that meaning can determine a richer kind of function which may take contexts of utterance, and not just ordinary possible worlds, as arguments.

Confirmation for this idea comes from Kaplan's adaptation of the idea of analyticity to encompass indexicals and the contingent analytic.<sup>4</sup> Kaplan suggests that a sentence is analytic if it is (has a meaning which determines the value of) *true with respect to every context of utterance*. Hence *The red book is red* and *I am here* are analytic, given that there is no context in which they can be uttered falsely, and *Snow is white* and *I am in St Louis* are not, since there are contexts of utterance with respect to which they are false. Thus the idea is that a sentence is analytic if it has a meaning which determines truth with respect to all contexts of utterance.<sup>5</sup>

But Kaplan's suggestion is not adequate when we turn from indexicals to consider analyticity for sentences containing names and natural kind terms. The sentence *Hesperus is Phosphorus*, being necessary but non-indexical-containing, returns the same truth-value with respect to every context of utterance. Yet as argued in the discussion of the first puzzle, *Hesperus is Phosphorus* ought not to be considered analytic.

Kaplan's definition can be adapted in a natural way, however, to give us the first of the two definitions of analyticity that I want to endorse in this paper. Names and natural-terms may not be indexicals and speakers do not associate them with a reference determining rule that can provide a different reference given a different context of utterance, but they do have extensions and referents, and those have to be determined somehow. What is distinctive about words like *cat* and *Hesperus* is that their referent depends on the state the world when they were introduced. Suppose, for example, that the word *Hesperus* was introduced when someone pointed to a bright spot in the sky in the evening and said "let's call that *Hesperus*." Then *Hesperus* refers to the thing that was that bright spot (the planet Venus) regardless of which possible world we are discussing and regardless of context. Yet it remains true that *had the bright spot in the sky been the planet Mars*, the name 'Hesperus' would have referred to Mars and not to Venus even though its referent was determined by the same mechanism

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<sup>4</sup>Strictly speaking, the Kaplan of *Demonstratives* sometimes calls the phenomenon *the contingent analytic* and sometimes *the contingent a priori*. I hold that the former was a more apt description.

<sup>5</sup>Formally, the world of evaluation makes an appearance as a part of the context of utterance, construed as a quadruple  $\langle a, p, t, w \rangle$  in which the 4th element is a possible world. A sentence is true in a context if the proposition it expresses in that context is true at the world of that context. The only admissible contexts are those in which the agent (a) is located at the place (p) and time (t) of the context in the world (w) and so *I am here now* comes out true at all contexts.

(pointing and speaking the same words with the same meaning) as in the actual world. Call the state of the world at the time the expression was introduced the *context of introduction*. Then the extensions of names and natural kind terms can vary with context of introduction. It is our implicit awareness of this fact that tells us in Putnam’s third case that where there could not have been an animal around when the word *cat* was introduced, *cat* must apply to non-animal creatures.

Thus, I contend that the meaning mentioned in the familiar story about analyticity is in fact the reference-determiner of the sentence. For now we can think of reference determiners as functions whose domain is the set of pairs in which the first member is a context of introduction, and the second member is a context of utterance. Contexts of utterance themselves contain circumstances of evaluation—ordinary common or garden possible worlds. The range of the function is the set of suitable extensions for the expression (e.g. an object, like Venus or Mars, or a truth-value, or whatever we think is the extension of a predicate (maybe a property or a set of n-tuples.)) Since names are non-indexical rigid designators, once we have specified the context of introduction, the reference determiner associated with a name is a *constant* function from contexts of utterance to the referent of the name.

The reference determiners of complex expressions will be determined from the reference determiners of their parts. That means the extension of complex expressions like *my cat* and *I read the longest book in the British Museum* are going to depend non-trivially on i) which possible world we’re in, ii) what the context of utterance is (i.e. who is speaking) and iii) the contexts of introduction of *cat* and *British Museum*. Let’s use the convention of writing vertical lines around an expression to refer to the expression’s extension/referent, i.e.  $|a|$  to refer to the referent of  $a$  and  $|snow\ is\ white|$  to refer to the referent of *snow is white*. To take a very simple example, a sentence of the form  $a\ is\ P$ , where  $a$  can be replaced by a name and  $P$ , a predicate, will be true (have the extension  $|\top|$ ) just in case  $|a| \in |P|$ . But the referent of  $a$  and the referent of  $P$  are determined by their reference determiners. So if  $a$  is an indexical expression, like  $I$ , then  $a$  will get a different referent given different contexts of utterance. That will mean that the sentence *I am tall* determines a different truth-value, given different context of utterance—its reference determiner is also a function from context of utterance and introduction pairs to extensions, in this case:

$$\begin{aligned} |I\ am\ tall| = \top & \quad \text{iff} \quad |I| \in |am\ tall| \\ & \quad \text{iff} \quad \downarrow I \downarrow (c_i, c_u) \in \downarrow am\ tall \downarrow (c_i, c_u) \end{aligned}$$

So in general, the reference determiner of an expression is a function from a context of introduction, context of utterance pair  $\langle c_i, c_u \rangle$  into the set the set of extensions. Then we say that a sentence is analytic just in case its reference determiner returns the value *true* in all contexts of introduction and contexts of utterance, that is:

**Definition 1 (Analyticity (modal definition))** *A sentence  $S$  is true in*

*virtue of meaning just in case for all pairs of context of introduction and context of utterance, the proposition expressed by S with respect to those contexts is true (in the circumstance of evaluation, which is part of the context of utterance.)*

## 5 Back to the Puzzles

Our new definition of analyticity resolves puzzle 1 as follows: *Hesperus is Phosphorus* is not true in virtue of meaning because it is not true with respect to all context pairs  $\langle u_i, u_c \rangle$ . Here is a counterexample: if  $u_i$  is a context in which reference determiner for *Hesperus* (say, the evening star as seen from London on 27th July 1789) picks out Mars and the reference determiner for *Phosphorus* (say, the morning star on 1st January 1540) picks out Mercury, then the sentence *Hesperus is Phosphorus* is false with respect to that context. Hence we need not be concerned with the fact that it fails to have the other properties associated with analyticity, because it is not analytic.

Puzzle 2 is resolved in a similar way: *Cats are animals* is not true in virtue of meaning, because there are contexts of introduction-utterance pairs with respect to which it may be false, such as the one where the objects we call *cats* have all always been robots and not animals.

In this case, more has to be said for a satisfactory solution, for if this sentence is not analytic, why does it seem analytic? The folk picture can provide an error theory here. Many people think both that i) they are competent speakers and that ii) that (as the folk picture requires) in order to be competent, they have to know how the referents of the various expressions are determined. Couple this with the psychological fact that people who think that they *must* know the answer to some question are apt to think that the very first answer that comes to mind is the right one, and we can sketch a story about why *all cats are animals* seems analytic: What is the reference determiner for *cat*? If you implicitly accept the language myth, you could be forgiven for answering something like “smallish furry animal with pointy ears, four legs and a tail”<sup>6</sup> But if this *were* correct, and then of course all *cats are animals would* be analytic. The apparent analyticity of *cats are animals* is itself an artefact of the folk theory of meaning.

So far I have said nothing about the epistemic and metaphysical consequences of a sentence’s being analytic. The new picture is one on which we have to be very careful about making the distinction between sentences and the propositions the sentences express. The relationship between the two is no longer 1-1, or even many-1, but many-many, since an indexical sentence may express many different propositions and the same proposition may be expressed by different sentences. Since it is sentences that are analytic, but propositions that are necessary or a priori, we need to be very careful about exactly *what* we are attributing modal or epistemic properties to as a consequence of the analyticity of some sentence.

Since *I am here now* is analytic on this definition, it should be clear that analytic sentences need not express necessary propositions—this is our solution

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<sup>6</sup>This of course, cannot be right, if only because cats who have lost a leg are still cats.

to puzzle 4. But in saying this we leave ourselves open to the following charge: *analyticity is supposed to entail necessity. If your new account of it doesn't allow for this, then it's not an account of analyticity.*

I disagree. Even on my view, analytic sentences are such that they will be true no matter what the world is like. Is it any wonder that earlier writers have sometimes confused this with the property of expressing a necessary proposition? If one restricts one's attention to sentences which express the *same* proposition regardless of context, then an analytic sentence *will* express a necessary proposition. Earlier writers did not have as good a grip on indexicality, or causal theories of reference as we do, and so they weren't familiar with the main counterexamples to the claim that sentence express the same proposition regardless of context. It is no surprise then, that they tended to slip from the claim that a sentence couldn't be false, to the claim that what it said couldn't be false. But that is no reason to stick analyticity with the claim that analytic sentences express necessary propositions—rather, we are now in a position to see that analytic sentences really have a kind of distinctive modal profile: they are true regardless of context.

Then what of their epistemic status? The special status of analytic truths in the traditional theory depended on two facts. First, that it was the meaning of the sentence that was (fully) determining the truth value of the sentence, and second, that that meaning was something that was known to competent speakers. Somehow we conclude from this that competent speakers will be able to tell that the sentence is true.

This suggestion of an argument will not survive our new picture because it equivocates on *meaning*. There is no guarantee that the thing that competent speakers must know (character) is what is determining the truth-value (reference determiner.)

I want to suggest that what is epistemically special about analytic sentences is that someone who knows the reference determiners for the expressions contained in them (as well as some basic background facts about how the language works, such as how the reference determiners of complex expressions are computed from their parts), is in possession of the premises of an argument to the conclusion that the sentence is true. Where the sentence is of the kind that expresses the same proposition regardless of context, they will also be in a position to deduce the proposition it expresses, i.e. not just that *all bachelors are unmarried* is true, but *that all bachelors are unmarried*.

This knowledge of reference determiners is not normally a priori, and nor is it generally linked with the idea of semantic competence. But then, in suggesting that analyticity is a matter of truth in virtue of reference determiner, I am suggesting that analyticity has much less to do with semantic competence than is usually thought. What is epistemically interesting about analytic sentences is that from knowledge of facts about *language*, i.e. that *bachelor* applies to an object iff it is a unmarried male, one can conclude something non-linguistic, i.e. that all bachelors are unmarried.

One advantage of having defined analyticity independently of its epistemic properties like this is that we can now ask whether there are any examples of an-

alytic sentences which fail to have the epistemic properties *usually* attributed to analytic sentences (such as the property of being knowable by competent speakers.) I think there are, and to see this it will help to consider the phenomenon of parasitic reference determination where the reference determiners are, for the most part, unknown to speakers. Consider a situation (perhaps not so different from the actual one) in which the name *Cassius* was introduced to the language when Mr Clay, indicating his newborn baby son, said “You’re right; it’s a good name. Let’s call him *Cassius*.” The name *Muhammed Ali*, on the other hand, is introduced in a different way that causes its reference determiner to be parasitic on the reference determiner for *Cassius*. At a certain point in his boxing career and journey towards the Muslim faith, Cassius’ spiritual advisor says “From now on, Cassius will be known as *Muhammed Ali*.” Cassius and the rest of the community adopt this name.

As a result of this second stipulation, *Muhammed Ali* will now refer to whoever *Cassius* referred to in the advisor’s utterance. But, of course, the reference determiner for *Cassius* is not sensitive to the context in which the advisor did his uttering, but only to the context in which *Cassius* was introduced. As a result, the reference determiner for *Muhammed Ali* will be sensitive to the context in which *Cassius* was introduced too. Consider what we would say if Mrs Clay’s baby had been replaced with an alien baby spy whilst still in the womb, whilst her biological baby went off to live a new life on Mars. The alien baby is eventually born, named *Cassius* by Mr Clay, and grows up to become a great boxer. Later on his advisor says “From now on, Cassius will be known as *Muhammed Ali*.” It seems to me that in these circumstances (as in Putnam’s case) we would say that Cassius is an alien spy, but also, crucially, that Muhammed Ali is an alien spy, which demonstrates that the referent of the second name is sensitive to changes in the context of introduction for the first.

Now consider how the modal definition of analyticity applies to the sentence *Cassius is Muhammed Ali* compared to *Hesperus is Phosphorus*. *Hesperus is Phosphorus* is not true in virtue of meaning because there are contexts of introduction with respect to which *the evening* star picks out *Mars* and the morning star picks out *Venus*. But the parallel situation cannot arise with *Cassius is Muhammed Ali* so that sentence will be true in virtue of meaning, though I think it is clear that this will not be knowable by all competence speakers.

*I am here now* is also true in virtue of meaning, but indexicals are rather unusual expressions because, since their content is their referent, and this differs with context of utterance, speakers normally need to know how to work out what the referent is in order to work out what proposition is being expressed—they have to implicitly know what the reference determiner is. But this knowledge means that they know the premises of the argument to the conclusion that the sentence *I am here now* is true. Hence semantic competence does give one access to the fact that this sentence is true.

But in a different respect both sentences are on a par epistemically: it’s the case that *if* one knows the reference determiners for all the expressions in the sentence, one can work out that the sentence is true. It is this property that is the epistemic consequence of analyticity, and it takes the natural but

false assumption that competent speakers know the reference determiners for expressions to derive the false claim that competent speakers can work out that analytic sentences are true.

For these reasons I hold, pace Williamson, that minimalism about semantic competence shouldn't lead to minimalism about analyticity itself, but rather to minimalism about the access that *semantic competence* gives to analytic truths.

## 6 Beyond the Modal Definition

The above definition of analyticity was given in more or less in terms of possible worlds with the addition of some useful concepts from set theory. Yet despite the real progress represented by possible worlds analyses of semantic concepts, they have had a tendency to fall short. There is no satisfactory definition of direct reference, or content in terms of possible worlds. Newtonian mechanics is powerful and useful, but tends to get things wrong at really high relative velocities. The possible worlds approach to semantics is similarly powerful and useful, but it tends to get things wrong in the presence of non-linguistic necessity. [Thomason, 1974] [Soames, 1987] [Kaplan, 1989a] [Soames, 1998] [Soames, 1999] [Soames, 2001] [Soames, 2004] [King, 2005]

My own modal definition of analyticity is no exception, and, where non-linguistic necessity enters the picture, we can generate examples of sentences which will have the same distinctive modal profile as an analytic sentence, even though they didn't get that profile because of something special about their meaning, but because of the substantive metaphysical facts. For theists, one example might include *there is a god*, which (at least if we insist on a certain non-indexical interpretation of the quantifier) plausibly contains no names or indexicals, and so if it expresses a necessary truth, no variation in context of introduction of utterance will make it false. Or suppose, for a particularly clear, but somewhat ridiculous example, that you accepted some hardcore metaphysical principles that entail that it is absolutely necessary that the object which is the evening star is the same object as the morning star. Then *the evening star is the morning star* would then turn out to express a necessary truth, and do so without being analytic. Even if these are not particularly convincing examples, I hope that the problem which they illustrate is clear: our modal definition is hostage to the facts about metaphysical necessity. But whether or not a sentence is analytic should depend on facts about its reference determiners alone, and not on facts about the modal world.

Unlike physicists working with Newtonian mechanics, we do not yet have a well-developed alternative to the possible worlds approach to semantics. The best alternative has been restricted to the concepts of content and direct reference, and it is the Russellian/Kaplanian "metaphysical picture" on which propositions are set-theoretic sequences which take ordinary objects and perhaps properties as elements. I propose to extend this metaphysical picture so that it can be used to provide a stricter definition of analyticity. I will only have space to sketch this picture here.

Sentences like *Cassius is Cassius* and *bachelors are bachelors* seem to be analytic (prescinding from worries about reference failure in the first sentence for now) because the reference determiner for the first occurrence of *Cassius* is the same as the reference determiner for the second occurrence of *Cassius* and similarly for *bachelors*. The same will hold if the reference determiners for *bachelors* and *unmarried men* are known to be the same, even though the words are different: *bachelors are unmarried men* will be analytic. It seems as if identity of reference determiner, used appropriately in a sentence, can induce analyticity.

But so can something else. *Mohammed Ali is Cassius* and *bachelors are unmarried* are analytic, but in these sentences it is not that the reference determiner of one expression is *identical* with that of another, but that the reference determiner of one is parasitic on, or part of, or *contained in* the other. Having noticed this, we see that identity is simply the limit case of containment—it is containment that is the more general notion.

There is a long history of defining analyticity using something like a notion of containment. Before we had the tools of possible world semantics, this was the concept for which we instinctively reached when describing analyticity. For example, Locke writes that a claim is “triffling” when “a part of the complex idea is predicated of the name of the whole” [Locke, 1690] and Kant “Either the predicate B belongs to the subject A, as something that is (covertly) contained in this concept A; or B lies outside the concept A, although it does indeed stand in connection with it. In the one case I entitle the judgements analytic, in the other synthetic.” [Kant, *First Critique*, A7/B11]

I want to suggest that the metaphysical picture for analyticity should include reference determiners, and containment relations between reference determiners. It will not suffice, however, to replace the words “belongs to” in Kant’s definition with “contains” and “predicate B” with “reference determiner of B”, because 250 odd years have shown up some other technical problems with Kant’s approach. [Frege, 1884] [Quine, 1951] [Quine, 1961] [Katz, 1967] [Katz, 1974]

While I don’t have enough space explain fully here, ultimately, the basic idea will be to generalise Kant’s notions of subject and predicate to the notions of logical subject expression (LSE) and logical predicate expression (LPE) and to invoke a third sentence-part, the modifier (M) of the sentence. Roughly the (LSE) is the expression, or sequence of expressions in the sentence that tell us *what the sentence is making a claim about*. The (LPE) is the expression in the sentence that tells you what the sentence is saying about the referent of the (LSE). In the simplest case, a sentence will be true just in case the objects which satisfy the (LSE) meet the condition specified by the (LPE), e.g. *snow is white* will be true just in case the objects which satisfy the reference determiner for *snow* meet the condition specified by *is white*. It seems clear that something special will happen if meeting the condition specified by the (LPE) is prerequisite for satisfying the (LSE): so long as *something* satisfies the (LSE) the sentence can’t help but be true. Hence we might be tempted to say that a sentence is analytic just in case the reference determiner for the (LPE) is contained in that of the (LSE).

Though this *is* the rough idea behind my non-modal definition, it isn't quite right. Consider what should be said about putatively analytic sentences like *no bachelor is married*, *it is not the case that any bachelor is married*, *Mary walks with those with whom she herself strolls*, *poor people have less money than rich people*, all of which are putatively analytic, but don't meet the suggested definition. Moreover, more has to be said about the effects of failure to refer. Finally, the proximity of analyticity to logic truth suggests that analyticity might be generalisable to *arguments*, as in:

Sam is a bachelor.  


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Therefore, Sam is unmarried.

If so, analytic truth might turn out to be a special case of *analytic consequence* and analytic truths might then be dividable into two kinds, i) core analytic truths in which a particular containment relation holds between the subject and the predicate, and ii) analytic consequences of core analytic truths.

More work needs to be done on all these topics, but I will finish by simply presenting and illustrating my second definition. The definition is:

**Definition 2 (Analyticity (metaphysical picture))** *A sentence that consists of modifier (M), logical subject expression (LSE) and logical predicate expression (LPE), is analytic if (i) the sentence can be true even if (LSE) is not met by anything, and either (ii) (M) is positive and  $\downarrow(S)\downarrow$  contains  $\downarrow(P)\downarrow$  or M is negative and  $\downarrow(S)\downarrow$  excludes  $\downarrow(P)\downarrow$ .*

At an intuitive level, the modifier (M) is a part of the sentence that can modify the relation required between the object(s) picked out by the (LSE) and the condition specified by the (LPE) in order for the sentence to be true. For example, while *bachelors are unmarried* will be true just in case the objects picked out by the (LPE) (bachelors) meet the condition specified by the (LSE) (being unmarried), *no bachelors are married* will be true just in case the objects picked out by *bachelors fail to meet* the condition specified by *married*. This modification can get pretty complicated, for consider *some bachelors are unmarried*, *four bachelors are unmarried* etc. However, modifiers can be split into three kinds, and only two are important when it comes to analyticity. *Positive* modifiers require that the condition specified by the (LPE) be met by every object which meets the (LSE) in order for the sentence to be true. Examples include *all* and *every*. *Negative* modifiers require that no object which meets the (LSE) satisfy the condition specified by the (LPE). The paradigm case is *no* in *no bachelors are married*. Every other kind of modifier is *neutral*. Clause i) in the definition is simply intended to rule out cases where the sentence will be false if the (LSE) is not met by anything.<sup>7</sup>

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<sup>7</sup>This clause deals brutally with reference-failure cases, such as *Muhammed Ali is Cassius Clay*. They do not count as analytic, because the sentence would not be true if say Mrs Clay had had a phantom pregnancy and was referring to her own hallucination when she introduced the name *Cassius*. Overall, this seems too brutal to me, and we can soften the

Clause ii) in the definition specifies two ways in which a sentence can be analytic. Either the modifier is positive and the reference determiner for the LSE contains that of the LPE. The sentence *all bachelors are unmarried* is analytic in this way. Alternatively the modifier is negative and the reference determiner for the LSE excludes that of the LPE. The sentence *no bachelor is married* is analytic in this way.

## 7 Conclusion

In this paper I have presented four puzzles for analyticity. They are not the usual objections presented by Quine and his followers, but rather puzzles that have arisen out of post-Quinean philosophy of language. Where there is an awareness of these problems for the traditional conception of analyticity, it is usually assumed that they provide one more reason to give up on the ASD. I have argued that this is not the case, and that they arise because the phenomena that support the puzzles—things like direct reference, semantic externalism, minimalism about semantic competence, and indexicality—undermine the folk theory of meaning that supported the traditional account of analyticity, and that revamping that folk account of meaning into one which is compatible with the new phenomena gives us a new account of truth in virtue of meaning, and so a new account of the ASD. In part my account has been presented in terms of the usual functions between contexts and possible worlds, and I have shown how this account can solve all four puzzles. But the definition given in these terms is susceptible to a problem that besets all semantic definitions given in modal terms—the definition tends to go awry in the presence of substantive necessity. My response to this problem has been to sketch the beginnings of a metaphysical picture—on the model of Kaplan’s metaphysical picture for direct reference—and use it to define analyticity. This last part of the paper has been a bit wild and sketchy, but I hope, not without interest anyway.

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blow by introducing a class of pseudo-analytic sentences, which meet clauses only ii) of the definition of analyticity, i.e.:

**Definition 3 (Pseudo-Analyticity)** *A sentence that consists of modifier (M), logical subject expression (LSE) and logical predicate expression (LPE), is pseudo-analytic if (M) is positive and  $\downarrow(LSE)\downarrow$  contains  $\downarrow(LPE)\downarrow$  or M is negative and  $\downarrow(LSE)\downarrow$  excludes  $\downarrow(LPE)\downarrow$ .*

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