

ARE THERE CONTINGENT, A PRIORI TRUTHS?

By

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A THESIS PRESENTED TO THE GRADUATE SCHOOL
OF THE UNIVERSITY OF FLORIDA IN PARTIAL FULFILLMENT
OF THE REQUIREMENTS FOR THE DEGREE OF
MASTER OF ARTS
UNIVERSITY OF FLORIDA

2006

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By

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ACKNOWLEDGMENTS

I would like to thank my chair, Dr. Greg Ray, for the myriad observations he made on various drafts and for his tireless effort toward the completion of this project. I would also like to thank my committee members, Dr. Kirk Ludwig and Dr. Michael Jubien, for their insightful comments and helpful suggestions at my defense. In addition, without the support of my fiancée, Karen Garito, this project would not have come to fruition. Finally, I could not imagine completing a task of this difficulty without the help of my Lord Jesus Christ.

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Abstract of Thesis Presented to the Graduate School
of the University of Florida in Partial Fulfillment of the
Requirements for the Degree of Master of Arts

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December 2006

Chair: Greg Ray

Major Department: Philosophy

While most philosophers have thought that necessity and *a priori* are co-extensive, there have been some who have challenged this claim. I examine the claims of Kripke, Fitch, Bostock and Williamson to see whether the candidates they offer for the contingent *a priori* are viable. I conclude that, for various reasons, each of them is not a true example of the contingent *a priori*. However, I offer a candidate that avoids the pitfalls of these alleged examples: ‘All actual geniuses are geniuses’. I conclude the paper by exploring and clarifying the semantic role of ‘actual’, in the process defending ‘All actual geniuses are geniuses’ as a contingent, *a priori* truth.

INTRODUCTION

From Immanuel Kant to philosophers of the present day, the possibility of a divergence between necessity and *a priori* has been denied. If Kant and those who agree with him are right, there can be no contingent, *a priori* propositions. Though the weight of tradition and the majority opinion of contemporary philosophers fall in line with Kant, there are dissenters. While the case for the necessary *a posteriori* and that for the contingent *a priori* are related, establishing one does not automatically establish the other. Therefore, I will focus on the case for the contingent *a priori*.

In this paper I will survey the literature on the contingent *a priori* in order to accomplish two things: 1) trace the course the conversation has taken as different candidates for the contingent *a priori* have been refuted and new ones have developed, and 2) question whether it is plausible that a viable candidate will ever be offered. We will consider a few different types of candidates.

The first sort of candidate considered will be the Kripkean examples. These depend on a linguistic stipulation that specifies the referent of a name in all possible worlds. It is argued by Kripke and others that proper names have the same referent in all possible worlds. Thus, if one stipulates that the referent of a certain name is the individual or thing which satisfies a certain definite description, while it will be true *a priori* that the definite description is true of and only of the referent of the name, it will be a contingent truth since the definite description might have been satisfied by someone else.

We will next consider the sort of example that Fitch labels the “incommensurability” type. There are, allegedly, contingent truths that one cannot believe falsely. These examples will depend on indexicality. For instance, ‘I have a headache’ and ‘I exist’ would arguably be in this

group. It is then argued that if one cannot believe these truths falsely, then if one knows them to be true at all one knows them *a priori*.

We will next consider the sort of example that I'll label the "actualized" type. These examples, like the Kripkean ones, depend on rigid designation to allow us to say things we can know *a priori* that are nonetheless false in some possible worlds. The difference is, while Kripkean proper names lack sense, actualized terms do not. The "rigidification" is accomplished not by linguistic stipulation, but by the use of 'actual' and its variants. For instance, 'actual receptionists' has a discernable sense, but rigidly designates all and only those things which are actually receptionists.¹

Finally, we will examine a non-indexical candidate for the contingent *a priori*. Examples of this sort could also be labeled the "self-satisfying" type. These examples are argued to be made true simply by believing them to be true. The trick is that they will be justified not by a deduction utilizing indexicality (one's knowledge of one's existence or one's belief states), but by an allegedly indexical-free, belief-forming mechanism.

I will begin with the discussion found in Kripke's Naming and Necessity, which broke from traditional thought on the subject and offered the first candidate for the contingent *a priori*. I will then examine Keith Donnellan's response to Kripke in Donnellan's paper "The Contingent *A Priori* And Rigid Designators". In "A Priority and Necessity" Philip Kitcher argues that part of Donnellan's analysis is ill-formed, but agrees with his conclusion that there are no philosophically interesting versions of the contingent *a priori*. I will also examine G.W. Fitch's

¹ There are two things that need to be said here. First, I am not claiming that the meaning of 'actual' is unambiguous. Rather, I will treat 'actual' in the same way it is treated in the papers I discuss (which will become clear later), so as to shed light on the conversation and see what merit it has. Second, I believe 'actual' is a rigidifier in the following sense: the phrase composed of 'actual' and the term it modifies refers to the same individual(s) no matter where the phrase occurs in a sentence (e.g. 'Actual receptionists' refers to the same individuals in 'All actual receptionists have desks' as it does in 'Necessarily, all actual receptionists have desks').

argument against Kripke and his dismissal of a couple of other alleged contingent, *a priori* truths in “Are There Contingent A Priori Truths?”

As these papers present certain problems for the Kripkean sort of candidates for the contingent *a priori*, I will next consider candidates involving ‘actual’ and Bostock’s attempt to refute them in his paper “Necessary Truth and A Priori Truth”. Bostock’s comments here will lead me to suggest a different example from the one he considers, one that I believe meets his objections. I will also reconsider Donnellan and Kitcher’s objections in light of this new candidate, as well as the argument given by Albert Casullo.

I will then investigate in what way the two-dimensional modal logic of Davies and Humberstone comes to bear on the question of candidates of the contingent *a priori* that involve ‘actual’ and its variants. I will also examine Williamson’s attempt to offer an indexical-free, contingent, *a priori* truth and see whether Graham Oppy’s attempted rebuttal is effective. I will then conclude by recapping the status of the various candidates and summarizing what we have learned about the contingent *a priori*.

KRIPKEAN CANDIDATES

Background

To properly understand Kripke's alleged examples of contingent, *a priori* truths, we must remind ourselves of Kripke's thesis that proper names are rigid designators. He writes, "Let's call something a *rigid designator* if in every possible world it designates the same object, a *nonrigid* or *accidental designator* if that is not the case."¹ We already have the intuition, says Kripke, that when we talk about how a thing might have been we talk about a possible situation *for that thing*, rather than talking about a different thing that is very similar to the original. Thus, our use of proper names should rigidly designate so that our talk of possible worlds captures our intuitions about counterfactuals. It is necessary that nine is greater than seven because both 'nine' and seven' are rigid designators that pick out the same object in every possible world.

'The number of planets', however, is a description rather than a name. Thus, the phrase will designate whatever happens to be the number of planets in the world in question, *not* necessarily the number of planets in the actual world. Traditionally, names have been considered abbreviated definite descriptions, picking out whatever entity, if any, matches the description in the world in question. Kripke believes, however, that definite descriptions are used to fix reference of names, to make them rigid designators; names are not simply abbreviated definite descriptions. If they were we would be asking about some different, albeit very similar, individual from Alex when asking, "What if Alex had not been an engineer?"

The "Standard Meter Bar" Example

One of the interesting results Kripke believes this thesis provides (and one of the reasons it has been so hotly contested) is that it seems to allow us knowledge of contingent, *a priori*

¹ In order to avoid trivial counter-examples, Kripke only requires that the rigid designators pick out the same object in the possible worlds in which the object exists.

truths.² One of Kripke's examples of this goes as follows. Let us stipulate that 'one meter' refers to the length of S, where S is a certain stick or bar in Paris. Now consider the proposition 'S is one meter long'. What are the epistemological and metaphysical statuses of this proposition? Given that the definition of 'one meter' is "the length of S (at the actual world)," the proposition seems to be straightforwardly *a priori*. However, it is surely a contingent fact that S is the length it in fact is; we can easily imagine possible worlds in which S is longer or shorter than it actually is. Therefore, the proposition is only contingently true, though still *a priori*.

An important thing to examine is how the sentence is being evaluated at merely possible worlds. Do we take what the sentence expresses at the actual world and evaluate it at different possible worlds, or do we evaluate the sentence according to what it expresses in each possible world? Kripke believes we must do the former because since names are defined not by synonym or abbreviated description but by fixing the reference, the reference of the names *at the actual world* is what underlies our investigations of modality. Thus, the proposition is contingent, but will be *a priori* only in the actual world. In every merely possible world the proposition would assert that a stick in the actual world is the same length as a stick in the merely possible one, something we cannot know *a priori*. If, however, we choose to evaluate the proposition in the latter way, it will be necessary and *a priori* since in every possible world the proposition will be equivalent to something like 'S (at this world) is the same length as S (at this world)'.

Problems with the Kripkean Examples

A worry that one might have with Kripke's example is revealed by the discussion of modal analysis found above. There seems to be an odd sort of circularity between the definition of 'one meter' and the proposition in question. 'One meter' is defined as "the length of S," but the proposition asserts that S is one meter long (i.e., that S is the length of S). While it does not

² See pages 54-57 of [Naming and Necessity](#) for the discussion summarized here.

seem problematic, the example seems somewhat contrived given that we do not normally assert propositions of this form, and the circularity could mask some semantic problem. It is unclear how strong this objection is, but for two reasons we shall not examine it further. First, there are other, clearer objections we shall discuss that make this example untenable. Second, Kripke has other examples of alleged contingent *a priori* truths that do not involve this same sort of oddness.³ Therefore, even if an “argument from oddness” can be made against the “Standard Meter Bar” example, it will not defeat Kripke’s general assertion that his theory of proper names opens the possibility for contingent, *a priori* truths.

In “The Contingent *A Priori* And Rigid Designators,” Keith Donnellan responds to Kripke’s theory of names and to the possibility of contingent *a priori* truths.⁴ He formulates one sort of “uneasiness” with Kripke’s examples, writing,

“It might be put roughly as follows: If a truth is a contingent one then it is made true, so to speak, by some actual state of affairs in the world that, at least in the sorts of examples we are interested in, exists independently of our language and our linguistic conventions.”⁵

It is difficult to see how definition by stipulation, on which Kripke’s examples depend, can give us epistemic access to non-linguistic states of affairs. The position Donnellan defends within this paper is that while we have no reason to deny that definition by stipulation is theoretically viable, such a procedure does not produce “interesting” contingent *a priori* truths.

³ ‘Neptune is the planet causing such and such discrepancies in the orbits of certain other planets’ is one example of an allegedly contingent *a priori* truth that does not involve such oddness. This example can be found on pg. 79 of Naming and Necessity. It is similar to the “Standard Meter Bar” example in that it relies on stipulation.

⁴ Contemporary Perspectives in the Philosophy of Language, eds. French, Uehling, and Wettstein. University of Minnesota Press, 1980 (pgs. 45-60)

⁵ *ibid.* (pg. 46)

Donnellan begins by defending Kripke from Dummett's attack on the idea that names can be introduced as rigid designators.⁶ He does so by making a distinction between arguing for certain historic examples of names being introduced as rigid designators and arguing that it is in principle possible to introduce names in this way. He argues that it would be impossible, without an explicit stipulation, to tell if historic cases (such as Leverrier's 'Neptune') are actually examples of rigid designation. Donnellan believes, however, that the philosophical worries about the contingent *a priori* are equally strong even if introducing names as rigid designators is merely possible. As he sees no reason to deny the possibility, he next shows how such a procedure does not yield philosophically interesting, contingent, *a priori* truths.⁷

Donnellan argues that any examples of contingent *a priori* truths, if they are examples at all, that follow from the stipulative introduction of a name as a rigid designator will not be worrisome (unlike Kripke's alleged examples).⁸ He begins by noting the distinction between knowing that a sentence expresses a truth and knowing the truth it expresses. For instance, I know that the sentence 'Fhqwhgads are Fhqwhgads' expresses a truth since a thing must be itself. If I do not know what Fhqwhgads are, however, I do not know the truth the sentence expresses. He then writes that we will represent the (Kripkean) stipulative introduction of a name with:

(a) Provided that the Φ exists, let "N is the Φ " express a contingent truth,

where 'the Φ ' is a definite description and 'N' is a name.

Donnellan believes that using this locution helps bring certain relevant features to light (which we will see later). He also argues that while it may seem worrisome that we are stipulating that something is contingently true, it is not suspect. So long as we pick a name that

⁶ *ibid.* (pgs. 47-50)

⁷ The idea that any examples of contingent *a priori* truths will be philosophically uninteresting is shared by many of those who disagree with Kripke (including Donnellan, Kitcher, and Bostock). I will explore later what 'philosophically interesting' may mean and whether the claim made by Donnellan and others is true.

⁸ *ibid.* (pgs. 51-8)

is not already in use within the language, we are not attempting to make some non-linguistic state of affairs the case; rather we are simply creating a purely linguistic state of affairs.

Furthermore, Donnellan asserts that we do not come to have knowledge of any (non-linguistic) state of affairs by our act of stipulation.

Donnellan has us consider Kripke's "Neptune" example to illustrate his point.⁹ If the Neptunians knew of Leverrier's stipulation, would they be justified in saying he had discovered their planet as the cause of the perturbations? Could they, in their language and using their name for their planet, say he knew their planet was the cause of the perturbations? Donnellan takes the answers to these questions to be "No" and concludes that there is no knowledge of a non-linguistic state of affairs given by the stipulation.

Donnellan also turns our attention to the classic "Newman-1" example, which he takes to be analogous to the above example.¹⁰ He says that any knowledge resulting from the stipulation must be *de re*, saying,

"... it would have to be knowledge *about* an individual in the sense that there is (or will be) an individual about whom we now know something and if that individual turns out to be John we now know something about John."¹¹

He says this is not simply because the propositions involve rigid designators; one could have *de dicto* knowledge as a result of rigid designation as well. What is required is that the rigid designators lack descriptive content in the propositions in question. It is his contention that this sort of stipulation fails to produce knowledge *de re*.

⁹ See footnote 5 for the gist of the example.

¹⁰ 'Newman-1 is the first child born in the 21st century,' where 'Newman-1' is stipulated to refer to the first child born in the 21st century.

¹¹ *ibid.* (pg. 54)

Having thus laid the foundation for his argument, Donnellan gives a rough characterization of two principles that hold for a wide number of cases but fail for both the “Neptune” and “Newman-1” examples. One of these principles is as follows:

“If an object is called by one name, say ‘N,’ by one group of people and by another name by a second group of people, say ‘M,’ and if, in the language of the first group ‘N is Φ ’ expresses a bit of knowledge of theirs and if ‘is ψ ’ is a translation of ‘is Φ ’ into the language of the second group then if the relevant facts are known to the second group, they can say truly that the first group ‘knew that M is Φ .’”¹²

Obviously, the Neptunians cannot say that Leverrier ‘knew that Enutpen is the planet causing such and such discrepancies in the orbits of certain other planets.’ Donnellan concludes that unless some other explanation can be given, Kripke’s examples fail to meet these criteria because they fail to produce knowledge of non-linguistic matters (the second criterion is similar to the first, applying to temporal cases like Newman-1 rather than Neptune).

So while Leverrier could have known (perhaps even *a priori*) that the proposition expresses a truth, he could not have known *a priori* the truth the proposition expresses. Donnellan notes that some might still wish to claim that these cases give examples of the contingent *a priori*, that one has *a priori* knowledge of a linguistic fact that could have been otherwise. Donnellan concedes that this could be true, but says that such examples are not philosophically interesting or worrisome, that they could be produced with names being stipulated rigid designators, and that traditional definitions will yield similar results.

One might object that Donnellan’s use of the two conditions is suspect for one reason or another. First, he readily admits that his conditions allow certain counter-examples, one of

¹² *ibid.* (pg. 55)

which is Kripke's "Hesperus/Phosphorus" example.¹³ If other of Kripke's examples can be shown to have the same features that allow general counter-examples to the conditions, Donnellan's case would be much weaker. Second (and on a related note), Donnellan leaves open the possibility for some other explanation of why the examples fail to meet the criteria. If such an explanation could be given, we would have less reason to deny the propositions in question could produce knowledge of non-linguistic matters.

Philip Kitcher argues that we need not agree with Donnellan that any knowledge produced by the stipulation must be *de re*.¹⁴ Consider the proposition 'If Shorty exists then Shorty is a spy,' where 'Shorty' refers to the shortest spy. The corresponding belief must be either *de dicto* or *de re* according to Donnellan (this is the alleged dilemma that Kitcher intends to deny). It cannot be *de dicto* because that would require that 'Shorty' have descriptive content, but the description was used merely to fix the reference. Therefore, it must be *de re*. However, if the belief were *de re* I should be able to say, upon meeting the shortest spy, "Ah, I knew (*a priori*) that you were the shortest spy." I cannot do this, so my belief cannot be *de re*. Therefore, I do not have *a priori* knowledge of the proposition expressed.

Kitcher argues that contrary to Donnellan's argument, our belief in this case is *de dicto*. Kitcher writes,

"The fact that 'the shortest spy' was used to fix the reference of 'Shorty' does show that the name 'Shorty' does not have a *particular* descriptive content. However, to use that description to fix the reference of 'Shorty', I must intend to use 'Shorty' as an abbreviation for a closely related description: 'Shorty' must abbreviate 'the shortest actual spy'."¹⁵

¹³ See footnote 22 of Donnellan's paper.

¹⁴ Philip Kitcher, "A Priority and Necessity," from *Australasian Journal of Philosophy*, 58 (1980), pgs. 89-101

¹⁵ *ibid.* (pg. 91)

Thus, my *de dicto* belief is ‘If there is a shortest actual spy then the shortest actual spy is a spy.’ Despite disagreeing with Donnellan’s analysis, however, Kitcher agrees that while we might have knowledge of contingent *a priori* truths through stipulation, they should not cause any worry.

In “Are There Contingent A Priori Truths,” G.W. Fitch considers and dismisses several alleged examples of the contingent *a priori*, culminating in his dismissal of Kripke’s example.¹⁶ The candidates he considers prior to considering Kripke’s he calls the “in corrigibility” examples. The first he considers is offered by David Benfield: ‘I have a headache’ uttered by someone else at some specific time.¹⁷ This is certainly contingent, but it is clearly not *a priori*. The proposition requires experiential evidence to be justifiably believed. Secondly, Fitch notes that examples of this sort purport special access to *a priori* knowledge; if Frank has a headache, he would be the only person in a position to know this *a priori*.¹⁸ Fitch argues that no human has special access to *a priori* knowledge (indeed, this would seem to show that the individual has some sort of individuating experiences he or she is drawing from), so examples of this sort cannot be contingent, *a priori* truths.

Fitch next considers an example by Alvin Plantinga. Consider ‘I know that $7+5=12$ ’. While the contingency of this is clear, its priority is much less so. One may be tempted to think that knowing the above truth requires knowing ‘I believe that $7+5=12$ ’, and that this is certainly known *a posteriori*. Plantinga argues that we cannot demand that to be *a priori* a truth must be known without the use of any experience, since certain experiences (namely those required to attain the concepts) are needed even to know ‘ $7+5=12$ ’.

¹⁶ *The Journal of Critical Analysis* vol. 6, no. 4, Jan./Apr. 1977

¹⁷ Fitch, 119

¹⁸ *ibid.* (pg. 120)

Fitch points out that the difference between the two is that in the former experience acts as a justification for belief, while in the latter it does not.¹⁹ While experience is certainly necessary to know anything (even if only to acquire the concepts involved), the hallmark of *a priori* knowledge is it either requires no justification or is justified purely on the basis of other *a priori* truths. Plantinga's example satisfies neither of these.

The third example considered by Fitch is 'I exist,' also given by Plantinga. Fitch replies that this too is justified on the basis of experience, albeit not any particular experience. Furthermore, this is yet another example that purports special access to *a priori* knowledge (only I can know *a priori* that I exist). For these reasons, this candidate for the contingent *a priori* must be dismissed as well.

Fitch now moves on to Kripke's example, 'Stick S is one meter long'.²⁰ Fitch argues, very similar to Donnellan, that while those who define 'meter' as 'the length of stick S' know that 'Stick S is one meter long' expresses a truth, they do not know the truth it expresses.²¹ Because a priority must be maintained, the stipulators must not have had any experience of S. Thus they are not acquainted with it, they do not know its length relative to other things, etc. Therefore, it is not clear, says Fitch, that they know what they're saying when they utter 'Stick S is one meter long'. He writes,

“If we make the distinction between sentences and propositions, then it seems clear that the fixers only know something about the language they helped to form, not about the world the language is used to describe.”

¹⁹ *ibid.* (pg. 121)

²⁰ *ibid.* (pg. 122)

²¹ *ibid.* (pg. 123)

Thus, he dismisses Kripke's alleged example of the contingent *a priori*. He closes his paper by remarking that while necessity and a priority are different conceptually (one is metaphysical while the other is epistemic), we have no reason as of yet to believe they are not co-extensive.

Conclusion

So, what can we conclude about the Kripkean candidates for the contingent *a priori*? The worry about the "Standard Meter Bar" example having an odd sort of circularity between the stipulation and the proposition in question doesn't rule it out as a candidate. However, Donnellan's worry is more problematic. While the problems with Donnellan's argument that Kitcher and I point out seem to be real problems for him, his conclusion that Kripke's examples are not philosophically interesting, a conclusion shared by Kitcher seems right.²² Fitch's comments reveal the essential point in Donnellan's paper without Donnellan's unnecessary and problematic conditions and without insisting that the knowledge produced by Kripkean examples must be *de re*. Fitch's paper reveals the essential problem with the Kripkean examples: linguistic stipulation alone cannot give us knowledge of a particular and, thus, cannot generate *a priori* knowledge of contingent states of affairs involving that particular. It also notes in passing the failure of candidates of the incorrigibility type.

²² What this claim amounts to, and how it informs and directs the discussion on contingent, *a priori* truths, will be examined later.

ACTUALIZED CANDIDATES

Background

David Bostock puts forth yet another objection to the idea that there are contingent *a priori* truths in his paper “Necessary Truth and A Priori Truth.”¹ He writes,

“I believe that, in the end, Kripke’s two claims [that there are contingent *a priori* truths and that there are necessary *a posteriori* truths] must be admitted to be correct, but that does not have quite the significance that one is apt to suppose.”²

His conclusion is similar to that of Donnellan. Kripke gets the results he claims but that they are ultimately not of much importance. However, Bostock reaches it for very different reasons. While Donnellan focuses on what sort of knowledge is produced by alleged examples of the contingent *a priori*, Bostock considers the question of rigid designation from Kripke’s theory of proper names and argues that rigid designation does not give us philosophically important examples of the contingent *a priori*.

Bostock begins by laying out some of the characteristics of the quantified, modal logic that underwrite Kripke’s notions of rigidity and necessity. The key notion is that of a *possible world*, a counterfactual situation where every proposition has a determinate truth value. A *possible* or *contingent proposition* is one that is true in some possible world; a *necessary proposition* is one that is true in every possible world.

Based on Kripke’s conception of names as rigid designators Bostock introduces another “rigidified” part of speech. By specifying the extension of a predicate at every possible world one introduces a rigid predicate.³ To give an example that will arise later in Bostock’s argument, we could stipulate that the extension of ‘cordate’ in all worlds is to be all and only those

¹ *Mind*, New Series, Vol. 97, No. 387 (Jul., 1988), pg. 343-379

² *ibid.* (pg. 344)

³ *ibid.* (pg. 351)

creatures that actually have hearts. In doing this Bostock separates the concern over the contingent *a priori* (and the necessary *a posteriori*) from the viability of Kripke's conception of naming. Rigidifying is a legitimate process apart from the question of whether names (or predicates for that matter) are actually rigid and so the concerns over the purported material difference between necessity and *a priority* are valid ones. Note that Bostock once again takes the same line as Donnellan in arguing that even if we do not *in fact* introduce terms as rigid designators or expressions, the worries over the material difference persist.

Bostock says that we have a set of words in the English language – ‘actual’ and its variants - that modify certain words or phrases and make them “Kripkean” (or rigid).⁴ The function of these words is to anchor whatever they modify to the actual world even if we are considering counterfactual situations. For example, consider the proposition ‘All actual geniuses are geniuses’. If I ask whether this proposition is necessary, I am asking whether it is true in every possible world that every thing that is a genius in the actual world is a genius in that world.

Within quantified modal logic an actuality operator, ‘**A**’, is used to accomplish what is accomplished by ‘actual’ and its variants in natural language.⁵ ‘**A**’ modifies a proposition, Φ , such that ‘**A** Φ ’ is to be interpreted as true at any world iff ‘ Φ ’ is true at the actual world. ‘**A**’ can also modify predicates; ‘**A** Fx ’ means ‘ x is actually F ’. As with other modal operators, when combined with other scoped operators the ‘**A**’ operator may take both wide-scope and narrow-scope positions.

⁴ *ibid.* (pg. 355)

⁵ *ibid.* (pg. 356)

Bostock's Argument Against the "Actual Inventor of the Zip" Example

With the foundations thus laid, Bostock gives his argument that the use of 'A', while permitting a material difference between necessity and truth in every possible world, also gives us results that do not match with our intuitive notions of necessity and contingency.

"Let '*p*' be any plainly contingent proposition, that happens to be true as things are, but could easily have been otherwise. Then '**A***p*' will be true. But then it follows further that '**A***p*' will be true in *all* possible worlds, for it will be true in all worlds that it is true in this world that *p*. If truth in all worlds suffices for necessity, we must then conclude that it is a *necessary* truth that **A***p*. But this is surely absurd. We cannot really turn a contingent proposition into a necessary one by adding such qualifications as 'actually' or 'in fact' or 'as things are', and the correct conclusion to draw is evidently that the criterion of truth in all possible worlds is no longer an adequate criterion of necessity."⁶

In order to remove the alleged counter-intuitive results of our working notion of modality (and thus of our modal system), Bostock suggests a different way of handling 'actual' and its variants. In what follows we will examine his system and his reasons for promoting it. This method will, according to Bostock, allow us to represent sentences containing 'actually' without giving counter intuitive results. He writes,

"The general idea is to treat 'actually' not as a new modal operator but as a device for indicating relative scope, so that the word no longer occurs explicitly in our formal language, where scope is shown differently, by order and bracketing."⁷

⁶ *ibid.* (pg. 357-8)

⁷ *ibid.* (pg. 360)

I will briefly explain the changes Bostock suggests and the advantages of making this revision. I will then question Bostock’s motivation for the change and some of the assertions he makes about the effects of the change.

Bostock works with ‘It is possible that the person who did actually invent the zip should not have done so’.⁸ The “old” formalization of this proposition would look something like the following:

$$\diamond \exists x (\mathbf{A} \forall y (Fy \leftrightarrow y = x) \cdot \sim Fx), \text{ where ‘F’ is ‘invented the zip’}.$$

Bostock, however, suggests the following “new” formalization:

$$\exists x (\forall y (Fy \leftrightarrow y = x) \& \diamond \sim Fx).$$

In the second formalization, ‘**A**’ is no longer present. Rather, the expression modified by ‘**A**’ in the first formalization is taken outside of the scope of the other modal quantifier and ‘**A**’ is removed. Thus, the modality is now a *de re* modality with the formalization read as, ‘Concerning the person who did invent the zip, it is possible that *he* should not have done so’.

Bostock believes that there are several reasons to accept this treatment of ‘actually’.⁹ First, this method can handle all instances of ‘actually’. Second, Bostock argues that it is *more* versatile than the previous system. He says that there are examples of propositions that the original treatment of ‘actual’ and its variants cannot formalize, such as ‘It is possible that all the actual dogs should have existed and some other dogs as well’. Finally, this method eliminates what Bostock takes to be counter-intuitive results (e.g. “philosophically interesting” necessary *a posteriori* truths). He writes, “The consequences of this [change in our modal system] for the divergence between necessary truth and *a priori* truth are clear: there is now no divergence – or at least none that is due to the word ‘actually’.” Before moving on to the possible problem with

⁸ *ibid.* This proposition underlies the potential candidate ‘

⁹ *ibid.* (pg. 360-362)

Bostock's move, let us examine his claim that his treatment allows us to formalize propositions that cannot be formalized by the traditional treatment.

Bostock uses the example mentioned above to illustrate this point. He says the point of the sentence is to assert that there is a world in which all actual dogs exist and other (i.e. non-actual) dogs exist. The problem, however, is that we cannot refer to the possible world in question when we treat 'actual' as a quantifier itself, so we have no way of evaluating the proposition asserted. The example can be represented with the following:

$$\exists w \exists x (x \varepsilon w \ \& \ D_{xw} \ \& \ \forall y (D_{yw^*} \rightarrow y \varepsilon w \ \& \ y \neq x)),$$

where 'w' is a variable ranging over possible worlds, 'x' ranges over possible objects, 'w*' denotes the actual world and 'D_{xw}' means 'x is a dog in w'. Bostock notes that we can use ' $\diamond \exists x (D_x \ \& \ \dots$ ' in place of ' $\exists w \exists x (x \varepsilon w \ \& \ D_{xw} \ \& \ \dots$ '. We may also replace ' $\forall y (D_{yw^*} \rightarrow \dots$ ' with ' $\Box \forall y (\mathbf{A}D_y \rightarrow \dots$ '. This suggestion could be used to try to represent the proposition in our usual system of modal logic. However, once we do we are unable to translate 'y ε w' since doing so would require asserting that the dogs that actually exist also exist *in the world we are discussing*. We cannot do this because we have dropped the ' $\exists w$ ', which we would have to refer back to in order to make the assertion.

Bostock's method, on the other hand, can treat this sentence and those like it with ease. Without removing 'A' we formalize 'It is possible that all the actual dogs should have existed and some other dogs as well' as:

$$\exists \beta \diamond (\forall x (x \varepsilon \beta \leftrightarrow \exists y (y = x)) \ \& \ \exists x (D_x \ \& \ \Box \forall y (\mathbf{A}D_y \rightarrow y \varepsilon \beta \ \& \ y \neq x)),$$

where ' β ' is a rigid-predicate variable that ranges over the possible world discussed. Therefore, the above formalization can be roughly translated as 'There is some β such that there is a possible world in which everything in β is in that world and everything in that world is in β .

Furthermore, in that world there is some x such that x is a dog and all of the actual dogs are in the possible world and are not identical with x '. Then, utilizing the unique role ' β ' plays in the language, Bostock can eliminate ' A ' and translate the proposition with the following:

$$\exists a(\forall x(x \in a \leftrightarrow Dx) \ \& \ \exists \beta \diamond (\forall x(x \in \beta \leftrightarrow \exists y (y = x)) \ \& \\ \exists x (Dx \ \& \ \Box \forall y(y \in a \rightarrow y \in \beta \ \& \ y \neq x))))).$$

Bostock admits that this method is somewhat cumbersome, but says that it allows us to translate these sorts of sentences without needing a further device. We can translate these sorts of sentences while still utilizing ' A ', but it requires a further device, like the one by Peacocke that Bostock discusses briefly.¹⁰

So there is a trade-off between having simpler expressions on the one hand and not having to introduce a further device into our formal language on the other. Which one we would deem the simpler revision would largely be a matter of preference, so Bostock's "argument from simplicity" does not tip the scales toward one or the other. We must, therefore, examine his motivation for suggesting the revision in the first place (i.e. that the traditional treatment of 'actual' and its variants leads to counter-intuitive results).

Bostock's argument that we need a different way of handling 'actual' and its variants seems plausible on the surface. Consider the following proposition: 'All philosophers are pale'. This proposition is both contingent (it is true in some worlds and not in others) and *a posteriori*; it poses no problems for the idea that necessity and *a priori* are materially equivalent. However, suppose the proposition above is actually true and consider the proposition 'It is actually the case that all '. It seems to me that Bostock believes we have the intuition that the modal status of this proposition should be the same as the first. Since in our current system of

¹⁰ *ibid.* (pg. 361)

modal logic the second proposition comes out necessary, Bostock believes there must be a problem with some component(s) of our system.

However, do we really have the intuition that these propositions should have the same modal status? We certainly do have the intuition (and rightly so) that it is not essential to philosophers that they be pale. That is, we believe the proposition ‘All philosophers are necessarily pale’ is false, and hence also that ‘It is actually the case that all philosophers are necessarily pale’ is false. However, this is the narrow-scope reading of the necessity operator; it is clear from Bostock’s talk of contingent propositions and ‘A’ being a propositional modifier that he has in mind *de dicto* necessity. So, what are our intuitions about ‘Necessarily, it is actually the case that all philosophers are pale’?

I must confess that I do not have clear, pre-theoretic intuitions on the status of *de dicto* modal statements that include ‘A’; my intuitions on *de re* modal statements including ‘A’ are reasonably clear though. However, I think there are a few reasons to think that Bostock’s conclusions about our intuitions and what we should do with our formal notion of necessity are either questionable or mistaken. First, since the traditional “truth in all possible worlds” notion of necessity works in so many cases, it would seem irresponsible to throw it out unless intuitions are reasonably clear and widely shared. Second, I think there is serious doubt that intuitions on this matter are in fact clear and widely shared. The fact there is continued debate would seem to be evidence of this. Third, it is at least possible that Bostock’s intuitions about the modal status of ‘Ap’ are, unbeknownst to him, intuitions about the *de re* necessity claims.

At the end of his paper, Bostock defends what he believes is a true example of the contingent *a priori* (378). His example is ‘If there is exactly one object that falls under the predicate, then it is necessary that there is no more than one’, where the predicate in question is a

rigidified predicate. Bostock notes that if the antecedent is false, the conditional turns out to be contingent. However, given the nature of rigidified predicates, we are able to know the proposition is true *a priori*. Therefore, we have a contingent, *a priori* truth based on a Kripkean language, though of a different sort than the ones Kripke mentions.

Bostock's example seems to avoid the worry with the Kripkean examples (i.e. that we cannot understand them *a priori*). While rigidified predicates, like Kripkean proper names, lack sense, since the predicate is mentioned rather than used it does not seem to present a problem for the example; we can understand the proposition. However, since we cannot know *a priori* which things fall under the predicate, and since the predicate does not have a sense, the proposition concerns only a linguistic state of affairs. As we shall see later when we discuss what it is for an example to be philosophically interesting, Bostock's example fails to be so. So, while the example seems to be an example of the contingent *a priori*, it is not of the sort that interests us.

'All Actual Geniuses are Geniuses'

While Bostock focuses on the actuality operator as a propositional modifier, one could offer a candidate for the contingent *a priori* that uses 'A' as a predicate modifier. So, even if Bostock is correct that the propositional modifier use of 'A' gives us counter-intuitive results when considered in conjunction with the wide-scope reading of one of the other modal operators, that may simply give us reason to limit where we place 'A' rather than reform our method for assessing necessity. I will conclude my argument against Bostock's position by showing that the narrow reading of the actuality operator (the one that gives us the contingent *a priori*) does not lead to counter-intuitive results, contingent *a priori* aside.

Consider 'All geniuses are geniuses'. This proposition is true and *a priori*. Now consider 'All actual geniuses are geniuses'. This also seems to be *a priori*, but what is its modal

status? Consider the individuals who are geniuses in the actual world. Is it true that they are geniuses in all possible worlds? Certainly not, since Albert Einstein might have been a man of average or below average intelligence, so ‘All actual geniuses are geniuses’ is a contingent proposition. According to Bostock, the function of ‘**A**’ in this position is to take the term it modifies out of the scope of the other modal operator, so ‘All actual geniuses are geniuses’ could be translated:

$$(\forall x)(\mathbf{A}Gx \rightarrow \Box Gx).$$

The above formula comes out false using our traditional system of modal logic, having the same truth conditions implicit in the possible worlds explanation above. Therefore, in this case there is no divergence between our intuitions and our system and, thus, no need for a Bostockean revision.¹¹

Bostock briefly addresses the possibility of rigidified predicates (351).¹² As rigidified predicates are similar to ‘actual geniuses’ in our example, we should look at his remarks. Though Bostock’s treatment of ‘**A**’ as a sentential modifier only includes the wide-scope reading, his treatment of ‘**A**’ as a predicate modifier allows him to handle narrow-scope uses of ‘**A**’ as well. Bostock says one can introduce rigidified predicates by stipulating what the extension of the predicate is to be in every possible world. In our example, the term ‘actual geniuses’ is taken to refer to all and only those things which are geniuses in the actual world. Thus, in all merely possible worlds, the extension of the predicate is determined by the things that happen to be geniuses in the actual world and which also exist in the world in question.

¹¹ Bostock makes implicit use of the principal that a proposition, *p*, is necessary just in case ‘ $\Box p$ ’ is true.

¹² It is noteworthy that while Bostock brings up the possibility of rigidified predicates, he does not involve them in his argument, nor does he say that they give counter-intuitive results.

Bostock explicates some of the features of this sort of rigidity with an example (351-2). ‘Cordate’ is to refer to all and only those creatures which have hearts in the actual world.¹³ ‘Renate’ is to refer to all and only those creatures which have kidneys in the actual world. Now we have two rigidified predicates. Suppose (as is the case) that it is a contingent, *a posteriori* truth that all those things which have hearts also have kidneys. It is, therefore, a necessary, *a posteriori* truth that all cordates are renates. It is a contingent, *a priori* truth that all cordates have hearts since in some possible worlds they will not.

Bostock believes that these fail to produce examples of the contingent *a priori* as well since he believes that his arguments we discussed earlier cover these cases as well. As I have responded to his earlier arguments already, I shall not revisit them here.

Conclusion

I admit that I have not decisively refuted Bostock’s argument. What I have done, at best, is question whether he is warranted in assuming the things he does and advocating a revised modal system. I have shown that it may be the case that Bostock’s criticisms of purported contingent, *a priori* truths involving wide-scope uses of ‘**A**’ are ill-founded, and that narrow-scope uses of ‘**A**’ can be used to form truths, like ‘All actual geniuses are geniuses’, that do not fall prey to Bostock’s objections.

¹³ Bostock also says that if something has a heart in the actual world and does not exist in some possible world, it is still a cordate in that world. This makes it such that something is necessarily a cordate if it is one at all.

PAST OBJECTIONS CONSIDERED IN LIGHT OF ‘ALL ACTUAL GENIUSES ARE GENIUSES’

What Does it Mean for a Candidate to be “Philosophically Interesting”?

While Bostock’s worries do not apply to our current candidate, there is another possible problem with candidates for the contingent *a priori* that depend on ‘actual’ and its variants. The Kripkean examples were said to be “philosophically uninteresting”. Can the same be said for our current candidate?

First, let us consider what a “philosophically interesting” contingent, *a priori* truth would be. Donnellan, Kitcher and Bostock all admit that uninteresting examples of the contingent *a priori* can be generated. However, none of them explains clearly what would make a case philosophically interesting or uninteresting. In reference to ‘Provided the Φ exists, “t is the Φ ” expresses a contingent truth’, Donnellan says,

“... I am not sure whether in the circumstances what sentences of form (A) express are both contingent and *a priori*. But if they are they are harmless varieties of the contingent *a priori*, examples of which we could produce without recourse to stipulations introducing rigid designators.”¹

What would these be and why are they uninteresting? Shortly after the above quote, Donnellan says that one might argue that sentences of form (A) are both contingent and *a priori* since they assert something true about language that might have been false. Donnellan’s paper also utilizes a distinction between linguistic states of affairs and non-linguistic ones, so perhaps the uninteresting examples of the contingent *a priori* are simply statements of *a priori* knowledge of a contingent, linguistic state of affairs.

¹ Contemporary Perspectives in the Philosophy of Language (pg. 56)

If this is what Donnellan, Kitcher and Bostock have in mind it is clear why they think such examples are uninteresting. For one, they are ubiquitous; most (if not all) of our linguistic stipulations might have been otherwise. Second, the contingent, *a priori* truth wouldn't be 'S is one meter long', for instance. Rather, it would be "'One meter' refers to the length of S'. Or, to put it in a locution similar to Donnellan's, 'Provided there is something which is one meter, "S is one meter long" expresses a contingent truth'. I say allegedly since one might contest the idea that our knowledge of the linguistic stipulations is *a priori*.

So, what would be a philosophically interesting contingent a priori truth? If what is said above is correct, we need *a priori* knowledge of a *non-linguistic* state of affairs. As I have shown, Bostock has not given us a decisive reason to reject 'All actual geniuses are geniuses'. This example (and those like it) do not depend on the Kripkean theory of naming and at least seem to make reference to a non-linguistic state of affairs. Therefore, 'All actual geniuses are geniuses' would seem to be philosophically interesting.

Donnellan's Objections Revisited

It is notable that Kripke's examples seemed to be about non-linguistic states of affairs until they were probed by Donnellan. Might the same thing happen to our current candidate? At the very least, we have a reason to reevaluate Donnellan's claim rather than simply taking it to have provided a refutation of all possible candidates for the contingent *a priori*. The examples Donnellan considered in his paper were all based on rigidified proper names or other sorts of linguistic stipulations. As a result, the terms did not have a sense that contributed to the truth conditions in any direct way; the sole function of the sense was to fix the reference. Because of this, Donnellan could argue that while we possibly know *a priori* that the sentence expresses a truth, we cannot know the referent of the rigidified term *a priori* and thus cannot know what

truth the sentence expresses. Examples involving ‘actual’ and its variants do have sense that may do more than simply fix the reference. Therefore, we must see whether they are different from the sort of examples Donnellan considers in a way that will allow us to know *a priori* the truth they express. To do this, I will step through the various parts of Donnellan’s argument with ‘All actual geniuses are geniuses’ as the sentence in question.

One reason Donnellan rejects Kripke’s examples is that they fail to meet two criteria Donnellan set up to test whether they assert any non-linguistic truth. However, there is a problem applying these criteria to our current candidate. The criteria are designed for examples involving proper names. Furthermore, the criteria cannot be easily adapted to the candidate we’re considering since to do so would require treating ‘actual genius’ as if it didn’t have a sense. So, Donnellan’s criteria, whatever force they may have against the Kripkean examples, simply do not apply to ‘All actual geniuses are geniuses’.

When Donnellan is concluding his argument he attempts to show where the line of reasoning from rigid designation to contingent *a priori* truths went wrong. In doing so he gives two possible things that can be known as a result of a stipulation:

(A) Provided the Φ exists, “t is the Φ ” expresses a contingent truth.²

(B) Provided the Φ exists, t is the Φ .³

If we were to adapt these to our current candidate, they would be:

(A’) Provided the Φ exists, “The actual Φ is a Φ ” expresses a contingent truth.

(B’) Provided the Φ exists, the actual Φ is a Φ .

² It is important to note that Donnellan does not commit himself to form (A) knowledge being *a priori*. He merely says that *if* we have *a priori* knowledge, it is form (A) rather than form (B). It is highly questionable whether we even have form (A) knowledge *a priori*.

³ *ibid.*

The flaw in the reasoning, according to Donnellan, is that while rigid designation can give us form (A) knowledge, it cannot give us form (B) knowledge. (A) is knowledge of a purely linguistic state of affairs while (B) is knowledge of a non-linguistic state of affairs. Do we have form (B) knowledge if we know that all actual geniuses are geniuses?

It seems that we do have form (B) knowledge if we know that all actual geniuses are geniuses, however. This is revealed if we consider why Kripke's examples give us form (A) knowledge but not (B). The way in which we can have form (A) knowledge without form (B) knowledge is if 't' does not have a sense that contributes to the truth conditions. This allows us to know that a sentence expresses a (contingent) truth without knowing the truth it expresses by simply stipulating that it expresses a truth.⁴ If 't' lacks a relevant sense and we do not know its referent *a priori*, we do not know the truth expressed. 'Is an actual genius' is not lacking in sense, however, so we do not have this problem.

One might make the point, however, that to have form (B) knowledge one must know (*a priori*) the referent of 't' in order to know that Φ is true *of him* (i.e. one must have *de re* knowledge). It is clear that Donnellan thought this was the case.⁵ It is also clear that we do not have *a priori* knowledge about any particular entity if we know all actual geniuses are geniuses; we do not even know who the actual geniuses are. Does this show that we do not have form (B) knowledge in this case?

Kitcher does not think so. As has already been shown with the example of 'Shorty is a spy', one can have a bit of *de dicto* knowledge about a non-linguistic state of affairs. The mistake Donnellan made, according to Kitcher, is requiring *particular* descriptive content rather than simply descriptive content. While do not have any knowledge of descriptive content about

⁴ Though this is not the sort of stipulation Kripke had in mind, Donnellan cashes out Kripke's examples in these terms. (pg. 52)

⁵ Pg. 58 and elsewhere

the referent of 't' (*de re*), we do have knowledge of some of the descriptive content of 't' (*de dicto*). Therefore, we can have form (B) knowledge despite our lack of *de re* knowledge.

Kitcher's Objection Revisited and Concluding Remarks

An interesting question arises from this, however. Kitcher, despite disagreeing with Donnellan's analysis, agrees with the conclusion that only uninteresting contingent a priori truths can be generated. How can this be given that it seems we can have contingent *a priori* knowledge of non-linguistic states of affairs rather than simply linguistic ones?

Kitcher says several things about Donnellan's conclusion and the possibility of interesting contingent a priori truths. He says that anyone can come to a priori knowledge of contingent truths, but doing so requires linguistic acts that are "at odds with the standard functions of language."⁶ Kitcher believes that even examples that have a non-linguistic component are uninteresting because they require odd linguistic stipulations in order to express. Given that our current candidate does not seem to involve this sort of stipulation, we have avoided Kitcher's worry.

It would seem, therefore, that none of the objections to the contingent *a priori* considered up to this point have provided a refutation of our current candidate. Donnellan fails to account for the fact that one can have form (B) knowledge without having knowledge *de re*, and while Kripke's examples do not provide this sort of knowledge, 'All actual geniuses are geniuses' does.

⁶ Kitcher, 100

GETTING CLEAR ON 'ALL ACTUAL GENIUSES ARE GENIUSES

Clarification and Background

Casullo begins his paper, "Actuality and the *A Priori*," by summarizing and addressing an argument by Kitcher which, though not appearing explicitly in the paper we discussed earlier, underlies and supplements the argument discussed earlier. Casullo begins by giving the following condition, which Kitcher believes is a condition on *a priori* warrants:

α is an *a priori* warrant for X's belief that p if and only if α is a process such that, given any total sequence of experiences which would have enabled X to form the belief that p , (a) some process of the same type as α could produce in X a belief that p , (b) if a process of the same type as α were to produce in X a belief that p then that process would warrant X's belief that p , (c) if a process of the same type as α were to produce in X a belief that p then p (390-391).

Casullo asks what knowledge, if any, this condition gives us about our own actuality. To see whether the knowledge of our own actuality is *a priori*, Casullo says we must ask questions about what our knowledge would have been had our experiences been different. This fact, in combination with Kitcher's view that 'actual' is an indexical, necessitates we determine whether it is possible to believe in world w the truth expressed by 'I'm actual' in w^* . If it is, then belief in one's actuality is not *a priori*.

Kitcher argues that since this result would be extremely odd, we must deny that 'I'm actual' expresses different beliefs at different worlds. Kitcher does not give up his belief that 'actual' is an indexical, but says that for the purpose of determining and applying a criterion of a priority, the difference between the tokens of 'I'm actual' doesn't matter. Casullo notes that the upshot of this view is that 'I'm actual' is true in any world in which I believe it, so condition (c)

is satisfied, and thus the knowledge of one's actuality appears to be *a priori* (392). He argues, however, that Kitcher's last move is *ad hoc*.

Let's adopt the following notation. 'S' refers to the speaker. '[P](α)' means 'the proposition expressed by sentence P in world α '. ' $\beta \varepsilon [P](\alpha)$ ' means 'world β makes true the proposition expressed by P in α '. Finally, ' α ' designates the actual world and 'w' some other world.

Casullo begins with the following summation of Kitcher's claims:

- (1) The belief that S expresses in α by tokening 'I'm actual' = the belief that S expresses in w by tokening 'I'm actual'
- (2) ['I'm actual'](α) \neq ['I'm actual'](w).

These claims are tantamount to saying that while the different tokens of 'I'm actual' express different propositions, they express the same belief. Casullo sums up Kitcher's defense of this claim with:

- (3) If the belief that S expresses in α by tokening 'I'm actual' \neq the belief that S expresses in w by tokening 'I'm actual', then the belief which S expresses at α by tokening 'I'm actual' is false at w.

Casullo supplements (3) with:

- (4) It is not the case that the belief which S expresses at α by tokening 'I'm actual' is false at w.

He agrees with Kitcher that (3) and (4) entail (1), but Casullo thinks (3) is problematic. Since all that is needed to justify (4) is the trivial fact that one cannot be wrong about one's actuality, Casullo grants (4) and focuses on the previous premise (393). To disprove (3), Casullo has us grant (contrary to Kitcher):

- (6) The belief that I express in α by tokening 'I'm actual' = ['I'm actual'](α)
- (7) The belief that I express in w by tokening 'I'm actual' = ['I'm actual'](w).

Conjoin these and we get:

(8) 'The belief that I express in α by tokening 'I'm actual' \neq the belief I express in w by tokening 'I'm actual'.

Notice that (8) satisfies the antecedent of (3), so it would seem reasonable to conclude that S's belief that he exists in α is false at w . This is an absurd conclusion, Casullo points out, since the belief is true both at α and w . He briefly considers the counter-argument that individuals are world-bound, but dismisses it because it would only be found persuasive by those who accept counter-part theory.

Casullo now argues that Kitcher's account contradicts the very things he hopes to derive from it, namely that knowledge of one's actuality explains how we can have knowledge of contingent, *a priori* truths of the kind proposed by Kripke. Casullo has us consider the Shorty examples mentioned earlier in this paper (If Shorty exists, then Shorty is a spy). Kitcher argues that to use 'the shortest spy' to fix the referent of 'Shorty', 'Shorty' must be acting as an abbreviation of 'the shortest actual spy' (394). Therefore, 'Shorty is a spy' is best represented by something like the following:

(12) If there is a shortest actual spy, then the shortest actual spy is a spy.

To determine whether (12) is known *a priori* on Kitcher's account, we must examine the proposition the sentence expresses in α and in w . Casullo has us grant that Shorty is a tall basketball player in w , while Kareem is the shortest spy in w . Now, 'If Shorty exists, Shorty is a spy' is clearly *a priori*. Kripke understands it as a *de re* belief, picking out Shorty in both α and w . Thus, it is a contingent truth; at w , Shorty is a tall basketball player. Since Kitcher takes it to be *de dicto*, 'Shorty' refers to Shorty in α and Kareem in w ; thus, it is a necessary truth. Kitcher's account is not only flawed, it does not help clarify the Kripkean examples.

Casullo concludes by investigating whether knowledge of one's actuality "stands in any significant epistemic relationship" to the Kripkean examples of the contingent *a priori* (399). Casullo has us consider ['If there is a shortest actual spy, then the shortest actual spy is a spy'](α). He argues that this example by Kitcher is of the same sort as beliefs Kripke takes to be examples of the contingent *a priori*. Kitcher does not say how this sort of example is related or similar to knowledge of one's actuality. It cannot be the case that they are both examples of noninferential *a priori* knowledge since that would require Kitcher's account to be correct and we have reason to doubt its viability. However, Kitcher argues, more convincingly, that beliefs of the sort above can be validly inferred from the necessary truth 'All A's are A's' and the knowledge of one's actuality. We can produce a slew of contingent, *a priori* truths of the type 'All actual A's are A's' in this same way.¹

Casullo leads us through the chain of reasoning showing the connection between 'All actual A's are A's' and knowledge of our own actuality (400). He has us consider 'Actual A's are actual A's,' noting that it expresses a necessary truth in any world in which it is uttered. Therefore, ['Actual A's are actual A's'](w^*) is true. What do we need to move from this belief to ['Actual A's are A's'](w^*)?

The move cannot be immediate since the belief would not be true at all worlds; there must be, therefore, some mediate knowledge to justify the inference. Casullo remarks that we must know that, "the extension of 'A's' includes the extension of 'Actual A's' in the world I inhabit." It is true *a priori* that if this is the actual world, then the extensions of 'A's' and 'Actual A's' will be the same. Therefore, if I know I am actual (i.e. that I inhabit the actual world), I know the contingent, *a priori* truth ['Actual A's are A's'](w^*).

¹ Notice that this is exactly the sort of candidate that has seemed, thus far, to be a viable example of the contingent *a priori*.

Casullo points out, however, that while the argument in the previous paragraphs is sufficient, it is not necessary (401). If one takes an indexical view of actual,' 'actual' refers to the world of utterance. Thus, the inference is justified since we need only know that w^* is the world of utterance. Casullo has thus shown that the contingent *a priori* is not inexorably linked to knowledge of one's actuality.

Casullo concludes that we still have reason to doubt Kripke's claims about the contingent *a priori*. Noting that his conclusion is similar to Donnellan's, Casullo writes that we have not stated the content of the belief. He says that if we accept Kripke's semantic story about proper names and definite descriptions, we may be able know *a priori* that some sentences express contingent truths, but we do not know the truths they express. As I have already responded to Donnellan along these lines, I shall not retrace my steps here.

Analyzing 'Actual'

While Casullo's paper seems to reveal that knowledge of one's actuality is not required for knowledge of contingent, *a priori* truths, it does not give us any new reason to doubt our current candidate. However, as Casullo notes, one might object that 'All actual geniuses are geniuses' is unclear because the semantic role of 'actual' still has not been made explicit. Though Donnellan's worries seem to not apply to examples involving 'actual', the surface grammar may obscure rather than clarify the meaning of the sentence. We must, therefore, analyze 'All actual geniuses are geniuses' in order to see whether it is an unproblematic candidate for the contingent *a priori*.

Let's begin with the following analysis of 'All actual geniuses are geniuses':

$(x)((x \text{ is a genius} \ \& \ x \text{ is in } \alpha) \rightarrow (x \text{ is a genius}))$,

where ‘ α ’ refers to the actual world. In this treatment, ‘ α ’ is a name that rigidly designates the actual world. This immediately re-opens the door to Donnellan’s objection. In order to know the truth expressed by ‘All actual geniuses are geniuses’ we must know that our world is α ; we must know that ‘ α ’ refers to α . Can we know this *a priori* (or even at all)?

One way we can have knowledge is by description. For instance, I know that Plato was the teacher of Aristotle and that the teacher of Aristotle was the student of Socrates, so I know that Plato was the student of Socrates. Knowledge by description is in some sense inferential knowledge. Can I know that this world is α through an inference of descriptions? No, because any description we might offer would also be satisfied by another world if someone at that world were to offer it. ‘This world’, ‘the speaker’s world’, ‘the world that exists’, and other variants will hold true at every possible world, though they won’t express the same truth at each world. What we need is a way to “pick out” our world from among all the possible worlds. This will give us knowledge of a particular world, allowing us to know that ‘ α ’ refers to α by having knowledge of a particular that also satisfies the description ‘the actual world’.

Another way we can have knowledge is by acquaintance. For instance, I am acquainted with my best friend and know things about him as a result of that acquaintance (e.g. that he is married). Assuming we are acquainted with our world, there are two ways in which acquaintance puts us in a privileged position to pick out “our world”: (1) we are acquainted with one and only one world – our world, (2) no one in another world is acquainted with our world. Thus, what we could not do with knowledge by description we can do with knowledge by acquaintance – know the particular world to which we want to refer.

So, is this world with which we are acquainted α ? Is it the actual world? That depends, in part, on whether the following accurately analyzes ‘All actual geniuses are geniuses’:

$(x)((x \text{ is a genius and } x \text{ is in my world}) \rightarrow (x \text{ is a genius})),$

where ‘my world’ is intended to act as an indexical, not as a description. I believe there are two good reasons to think that this treatment of ‘actual’ is accurate. First, when we say ‘actual world’ and ‘my world’ we certainly intend to refer to the same world, so the two phrases are materially equivalent. Second, this analysis explains the reasons mentioned earlier why we cannot have knowledge by description in this case. ‘This world’, ‘the speaker’s world’, ‘the world that exists’, and other variants will act as indexicals, referring to the world in which they are uttered or considered. Thus, though they do not refer to a particular world when taken as descriptions, as indexicals they will have the correct meaning at whatever world they are evaluated while still referring (as considered at a particular world) to a particular world.

In what follows I will give a possible account of how knowledge by acquaintance can act as the basis for us knowing *a priori* that ‘ α ’ refers to α (i.e. that our world is the actual world). I will not insist that we are therefore acquainted with the actual world, but simply that we have the knowledge of the actual world that we need.²

I will begin by giving a series of conditional premises that will lead us to this conclusion. I will then provide support for the antecedent of the first premise and explanation for the premises which may be found less than obvious. Thus, I will have proved that we can know *a priori* that our world is the actual world, not simply that ‘Our world is the actual world’ expresses a truth; this is equivalent to knowing that ‘ α ’ refers to α .

(1) If I think, then I exist.

(2) If I exist, then I am actual.

(3) If I am actual, then the world of which I am a part is the actual world.

² It may, however, be the case that we are acquainted with our world.

(4) As a world is a complete state of affairs, my knowledge of myself either constitutes complete knowledge of the world or partial knowledge of it.

(5) Either way, I know that there is an actual world and that my world is that world.

Perhaps (4) is in need of a brief explanation. My knowledge of myself would constitute full knowledge of the world if solipsism is true and I have complete knowledge of myself (*a priori*). Otherwise, I have only partial knowledge (*a priori*) of my world.

I will not bother to defend the claim that I know that I think. It is important, however, to distinguish just what is meant by '*a priori*' since it has been used in different ways. I will not attempt to give a thorough account; I will simply give a rough definition that will capture what is traditionally meant by the term and make explicit the feature relevant to this case.

Something can be known *a priori* iff it can be known without having any experience that is not essential to acquiring the concepts involved (i.e. being able to use the words competently).

The motivation behind this definition is that if we deny the cogitator reference to any and all experiences, he will be unable to employ concepts since they require experience to acquire. We maintain *a priori*, however, by limiting the experiences involved to the minimum required to acquire the concepts.

The Contingent *A Priori* and Knowledge of One's Actuality

It is important to notice that the link between the contingent *a priori* and knowledge of one's actuality has once again been asserted, albeit in a way different from Kitcher's view. This link holds if the above defense is required, but I do not believe it is. First, one might object that while I have provided a seemingly viable analysis of 'is an actual genius', one must be acquainted with the actual geniuses themselves if one is to even understand 'All actual geniuses are geniuses', let alone believe it. As Donnellan suggests, if I do not know who the actual

geniuses are, how can I say of *them* that they are geniuses? I may know that ‘All actual geniuses are geniuses’ expresses a truth, but I don’t know the truth it expresses. It is similar to ‘Fhqwhgads are Fhqwhgads’. Thus, what is needed is acquaintance with actual geniuses, not the actual world.

I think noting an important distinction between proper names and quantitative expressions reveals the disanalogy between the current candidate and past ones. Proper names are singular referring terms while quantitative expressions (definite descriptions, general terms/expression, etc.) are denoting expressions; this distinction is based on Russell’s observations. I will not go into the arguments for and against the distinction between referring and denoting, other than noting the supporting intuition that the connection between a proper name and its referent is more direct than is the connection between a definite description and the thing it describes.³ A proper name just is a title or label for an individual thing, while a quantitative expression simply picks out the thing which uniquely satisfies it. How does this distinction help us?

Consider ‘Newman-1 is the first child born in the 21st century’. The best way to represent ‘Newman-1’ would be with a constant rather than a variable, a formalization of the proposition being:

F(c),

where ‘F’ means *is the first child born in the 21st century* and ‘c’ refers to Newman-1. Since the formalization requires a constant, knowledge of the proposition requires knowing *that c* is the first child born in the 21st century. It requires knowledge of Newman-1 than cannot be gained just by the stipulation that was its origin, or by description. It requires acquaintance.

³ As evidence, reflect on the difference between ‘The author of Huckleberry Finn is Mark Twain’ and ‘Samuel Clemens is Mark Twain’, or ‘Mark Twain is Mark Twain’.

Now consider ‘All Martians are green’, which could be represented by:

$(\forall x)(Mx \rightarrow Gx)$.

Here we have a universally-quantified variable rather than a constant. Thus, we do not need to be acquainted with Martians to understand the proposition. We don’t even to know whether such beings exist to understand the proposition. So, while our previous candidates may have been problematic, we have no reason to think that of ‘All actual geniuses are geniuses’.

Two-Dimensional Logic and the Contingent *A Priori*

In the paper by Bostock discussed earlier, he mentions a paper by Martin Davies and Lloyd Humberstone in which a two-dimensional modal logic is used to handle the modality of ‘actual’ and its variants. In what follows I want to look at the system, partly to understand our current candidate better and partly to see whether their system attempts to undermine, in any way not yet accounted for, the viability of ‘All actual geniuses are geniuses’ as an example of the contingent *a priori*.

In “Reference, Contingency, and the Two-Dimensional Framework,” Davies begins by characterizing what he calls ‘the two-dimensional framework’.⁴ There are some sentences, like ‘It is possible that everything that is actually red should have been shiny,’ that resist formulation using traditional modal logic. The usual way of handling these sorts of sentences is to introduce an actuality operator, ‘A’ (84). Davies writes,

“In terms of possible-worlds model-theoretic semantics for the modal language, a sentence ‘As’ is true with respect to a possible world, w, just in case the embedded sentence s is true with respect to the model’s designated or ‘actual’ world, w*.

One result of this, which was noted earlier in this paper, is that if ‘As’ is true at all it is necessarily true. This seems hard to reconcile, however, with the fact that what is actually the

⁴ Philosophical Studies, 118, 2004 (pgs. 83-131)

case is (at least mostly) a contingent matter. This leads Davies (and Humberstone) to suggest two sorts of necessity to clarify the difference, and an additional modal operator to help characterize the two types of necessity.

Davies and Humberstone suggest ‘ \mathcal{F} ’, a “fixedly”-operator (85). While ‘ \mathbf{A} ’ increases our modal language’s ability to express sentences by allowing us to vary our world of evaluation, w_j , ‘ \mathcal{F} ’ allows us to vary what world plays the role of the actual world, w_i . Davies writes,

“A sentence ‘ $\Box s$ ’ is true with respect to a world w_j with world w_i playing the role of the actual world just in case, for every world w , the embedded sentence is true with respect to world w , with w_i still playing the role of the actual world. A sentence ‘ $\mathcal{F}s$ ’ is true with respect to a world w_j with world w_i playing the role of the actual world just in case, for every world w , the embedded sentence s is true with respect to w_j , but now with w playing the role of the actual world” (85-86).

How this operator gives us two different notions of necessity can be seen by considering ‘ $\mathcal{F}\mathbf{A}x$ ’. If s does not contain \mathbf{A} , ‘ $\mathcal{F}\mathbf{A}x$ ’ is equivalent to ‘ $\Box s$ ’. If, however, x is of the form ‘ $\mathbf{A}s$ ’, where s is some contingent truth, then a difference is revealed. While ‘ $\Box x$ ’ is true, ‘ $\mathcal{F}\mathbf{A}x$ ’ is false since it is equivalent to ‘ $\mathcal{F}\mathbf{A}s$ ’ and thus to ‘ $\Box s$ ’. As a result we have two different sorts of necessity, allowing us to maintain the intuition behind the semantics of ‘actually’ and the intuition that it is a contingent truth that the world that is in fact the actual world is the actual world.

Thus the two-dimensionality of this system of modal logic is revealed (87). Before ‘ \mathcal{F} ’ the only world we needed to consider when evaluating a sentence was w_j ; the logic was, thus, one-dimensional. Now, however, we must also consider w_i since it can vary; thus, our logic is two-dimensional. While Davies goes into more detail about this and addresses many related

tangents, I shall not go into those considerations here. Rather, we shall conclude our look at his paper by examining his comments on the contingent *a priori*.

Before going into Davies' comments we shall give Evans' characterizations of superficial (corresponding to '□') deep (corresponding to 'ℱ') necessity and contingency, which Davies summarizes and uses in his comments (93-94).⁵ Superficial contingency is a property of sentences, and depends on how the sentence embeds under the scope of '□' or '◇'. Davies lists three ideas associated with superficial contingency to help us understand the notion: truth with respect to worlds, purely internal to semantic theory, and properties of modal sentences (95). On the other hand, three ideas associated with deep contingency are: truth in worlds (being made true), not purely internal to semantic theory, and modal properties of sentences. Davies inserts the following quotation by Evans,

“If a deeply contingent statement is true, there will exist some state of affairs of which we can say both that had it not existed the sentence would not have been true, and that it might not have existed. The truth of the sentence will thus depend upon some contingent feature of reality.”

Superficial contingency and necessity are simply the negation of deep contingency and necessity.

Davies spend some time exploring and defending the notion of 'truth in a world' and showing that his D-necessity and Evans' deep necessity are one and the same even though the former is put in terms of a modal operator, 'ℱ', and the latter is not. However, I wish to move on to Davies' application of two-dimensional modal logic to alleged cases of the contingent *a priori*.

Davies begins by expounding Evans' notion of epistemic equivalence (99). Essentially, two statements are epistemically equivalent iff they have the same content and, if both are

⁵ Davies calls superficial necessity 'H-necessity' and deep necessity 'D-necessity' since '□' is truth along the horizontal and 'ℱ' is truth along the diagonal in a two-dimensional system.

understood, one cannot believe one and disbelieve the other. One example of this which is important for our investigation is the epistemic equivalence of 's' and 'As'. One result of this is that we are in a position to know ' $As \leftrightarrow s$ ' *a priori*. Davies' example is that if someone understand the notion of actuality, he is in a position to know *a priori* 'if the earth moves, the Earth actually moves'.

Davies notes several things about this example. First, s can only be known *a posteriori*, so As can likewise only be known *a posteriori*, though ' $As \leftrightarrow s$ ' is known *a priori*. Second, while ' $\Box(As)$ ' is true, ' $\neg\Box(As)$ ' is false (100). 'As' is superficially necessary and deeply contingent. ' $As \leftrightarrow s$ ', however, has the opposite properties; it is superficially contingent and deeply necessary. Thus, our example, and those of the same form, seems to show a correlation between a priority and deep necessity, though nothing about two-dimensional modal logic *per se* demands this.

Davies now gets to the heart of the matter, investigating whether there are deeply contingent, *a priori* truths. He says there are two problems: 1) there are some noteworthy counter-examples to the claim that a priority and deep necessity coincide, and 2) while intuitions seem not to favor the contingent *a priori*, it is very difficult to form an argument from them. We will conclude our look at Davies' paper by considering each of these in turn.

Davies gives the example of the belief that one has hands (101). While it is certainly possible that I am simply a brain in a vat, I am entitled to ignore this possibility so long as there is no evidence in support of it, and am justified in believing I have hands. Similarly, Davies notes that when doing a mathematical proof, one is entitled to ignore the possibility (so long as there is no supporting evidence) that one is suffering from a massive memory loss and, thus, cannot be sure the proof is being done correctly. In these cases, Davies alleges, one has *a priori*

beliefs for which defeaters could arise (i.e. certain experiences would reveal them to be false, or at least unjustified) (102). Thus, we have certain *a priori* beliefs about contingent states of affairs.

For my part, I do not see how Davies' examples can properly be considered *a priori*. He says that I am entitled to believe these things so long as there is no contradictory evidence, but how do I know *a priori* whether there is contradictory evidence or not? I need to know there is no contradictory evidence for my belief to be justified, but I can only know this *a posteriori*. Furthermore, the belief that I have hands was formed *a posteriori*; I had to see my, or perhaps someone else's, hands. It seems that if anything here is *a priori* it is the epistemic warrant 'I am entitled to believe x so long as there is no evidence to the contrary', where 'x' is a variable ranging over a certain type of belief. If this warrant, or something like it, is true at all it is necessarily true, so Davies does not bolster the case for the contingent *a priori*.

Davies gives the following *reductio ad absurdum*. Suppose there is a truth, s, which is both able to be known *a priori* and deeply contingent. Now, s is true iff a certain state of affairs, S, obtains. However, S may or may not obtain; there is no guarantee that it will obtain (i.e. it is not a deeply necessary truth). Davies says that this may appear to be a contradiction since s would as a guarantee of S, but says this is a confusion between the modal and the epistemic notion of 'guarantee'.⁶ What is needed is a step showing that if S is not modally guaranteed than it cannot be epistemically guaranteed (by s or any other proposition), but Davies notes how similar this is to the assertion that if something is *a priori*, then it is deeply necessary – the very thing we wished to prove (103).

⁶ Though Davies does not say exactly what this amounts to, he says s acts as an epistemic guarantee for S, but S is not modally guaranteed.

So in the end, while Davies admits that there are strong intuitions (at least for some) against the possibility of contingent, *a priori* truths, he has given us no reason to doubt the possibility, nor does he claim to. Note that while Bostock's claims about the impossibility of (philosophically interesting) contingent, *a priori* were much stronger than Davies, his use of two-dimensional modal logic did not present any problems more substantial than those Davies raises.

Conclusion

Casullo's paper helped us understand the problems with the Kripkean examples and how our current candidate does not fall prey to those problems. It did, however, reveal the need for an analysis of our current candidate. We have seen that a viable analysis of 'is an actual genius' can be given that not only allays concerns about the meaning of 'All actual geniuses are geniuses', but also separates the question of the contingent *a priori* from questions about the knowledge of one's actuality. The two-dimensional modal logic of Davies and Humberstone has helped us understand our current candidate by revealing how the rigid designation accomplished by 'actual' affects the modal status of the proposition. We can also conclude that we have seen no reason to doubt that 'All actual geniuses are geniuses' is both contingent and *a priori*, and that (bar some refutation being given) we should accept it as such.

A NON-INDEXICAL CANDIDATE FOR THE CONTINGENT *A PRIORI*

Introduction

It is interesting that all of the candidates considered thus far have relied on indexicality in some way. In some cases this is clear, and in others the indexicality would be revealed if we were to analyze the proposition in question. One might be tempted to think that the contingent *a priori*, if there is any such thing, depended upon indexicality. Timothy Williamson, however, wishes to separate indexicality from questions about the contingent *a priori* by providing and defending an indexical-free, contingent, *a priori* truth.

Williamson and Oppy's Conversation

Williamson begins by suggesting the following:

(1) There is at least one believer.¹

Williamson notes that 'is' must be read tenselessly if the proposition is to be indexical-free. It is clear, setting aside for the time being the worry that God is a necessarily existing believer, that (1) is contingent. However, does one know (1) *a priori*?

Williamson writes, "Now since it is impossible to believe (1) falsely, it seems that one can know (1) *a priori*" (114). Does this condition ensure *a priority*? At the end of his paper Williamson briefly discusses the problem of providing a formal definition of '*a priori*' that lines up with our understanding of how the term should be employed. He provides a couple of examples, shows how they are problematic, and concludes by saying that while one might question whether his condition is necessary, it is certainly sufficient. While he does not say why, I believe it is because the nature of *a posteriori* truths would seem to require that it be possible that they be believed falsely. Thus, anything which is impossible to believe falsely must be *a priori*. I see no problem with this, and agree that Williamson's condition is at least sufficient.

¹ Analysis, 46.3, June 1986 (pgs. 113-117). *The Contingent A Priori: Has It Anything To Do With Indexicals?*

But now the worry is that one cannot know (1) without the use of indexicals. While (1) does not contain them, it is arguable that one cannot know that (1) is true without knowing:

(2) I am a believer.

If this is true we are presented with a dilemma. We can either admit that indexicality is, even in this case, required for something to be a contingent, *a priori* truth, or we can say that (2), and thus (1) as well, is not *a priori* at all because it is based on introspection. Therefore, we either have yet another indexical-based example of the contingent *a priori*, or no example of it at all.

Williamson responds by arguing that one can know (1) *a priori* without the use of (2). He begins by providing the following method of forming beliefs:

(M) Given a valid deduction from the premise that someone believes that P to the conclusion that P, believe that P.

The set of beliefs formed according to this principle, or belief-forming mechanism, would include only true beliefs (that is, (M) is infallible). Since this fact can be known *a priori* it follows that any knowledge produced in accordance with (M) is itself known *a priori* so long as the “input” is knowable *a priori*. If we replace P with (1), the deduction from,

(3) ‘Someone believes that there is at least one believer’,

to (1) is clearly valid (115). Looking at (M), we see that the deduction from (3) to (1) is the input. We can certainly know that the deduction is valid *a priori*, so we have an *a priori* warrant for believing (1), a contingent truth.

(M) can also be used to generate other indexical-free, contingent, *a priori* truths. For instance, ‘There is at least one thing which exists’ is certainly contingent, and by (M) we can know it *a priori* without reference to the ‘I exist’.

Williamson concludes his argument by addressing the objection that God is a necessarily existing believer, thus making (1) necessary rather than contingent. We can modify (1), getting:

(1') There is at least one fallible believer.

The deduction for (M) goes as follows. If someone believes that (1'), this being is either fallible or infallible. If fallible, then (1') follows trivially. If infallible, then the being's belief that (1') must be true. So, we can know (1') a priori, and it is certainly contingent since there are possible worlds in which God, an infallible believer, is the only believer that exists.

In "Williamson and the Contingent *A Priori*" Graham Oppy denies that Williamson has adequately supported his conclusion.² Oppy begins by arguing that the way (M) is formed hides the fact that it actually contains an indexical (189). Rather than putting things in the imperative (i.e. 'believe p'), Oppy suggests two ways one could use (M).

(M') If from the fact that I believe that P it follows that P is true, then I shall have a true belief if I believe that P.

(M'') If from the fact that someone believes that P it follows that P is true, then anyone can form a true belief by believing that P.

(M') is clearly problematic because of the indexical. Oppy argues that because (M'') is universally quantified and (1) is existentially quantified, while we can know (M'') *a priori*, it has not been shown that we can know (1) *a priori*.

Before continuing with Oppy's paper let's look more closely at his claim. If things are as he says and one is trying to infer an existential from only a universal, then his objection would be valid because of the lack of existential import. However, this is not the case. We are inferring (1) not from (M), but from 'Someone believes that (1)', another existentially quantified statement. On the basis of this deduction the universally quantified 'Anyone can form a true belief by believing that (1)' is made by way of (M), but this suffers no problems with existential import. Oppy's objection, therefore, is unsubstantiated.

² Analysis, 47.3, October 1987 (pgs. 188-193)

Oppy has misunderstood (M). (M'') is intended to be a proposition in a deduction, while (M) is a belief-forming mechanism, not a proposition. Furthermore, it is (in some ways) similar to the reading that Oppy anticipates Williamson would use in replying to his objection (190). Oppy formulates this reading as:

(APK) $B_{xp} \rightarrow p$

Therefore, p .

He notes that it is similar to *modus ponens* except that it is only truth-preserving when used. He then argues that even on this reading of (M) the inference to (1) is not justified.

Oppy has us suppose that there is a computer that exists in a world in which there are no subjects (i.e. no one who has beliefs). If this computer operates in accordance with *modus ponens* it will produce only true results, but this is not so for APK. The machine will generate 'There is at least one believer', which is false. Therefore, any inference based on APK would not be valid.

Oppy admits that this objection is somewhat questionable, but I believe that it is hopelessly flawed. Let's remember that the purpose of (M) is to produce truths that are impossible to believe falsely. So, does the thought experiment above disprove Williamson's claim? No. The computer does not have beliefs at all, so it certainly does not have any false beliefs. If it did have beliefs, then (1) would be true. Let us, therefore, move on to another objection Oppy lays out.

Consider a subject with limited self-awareness (i.e. who can competently use words like 'believer' without knowing that the terms apply to him) (192).³ Now, as far as he knows his world has no subjects. So, what will keep him from concluding, via APK, that some world other than his own, which happens to be subject-less, has at least one believer? Oppy believes that it is

³ This presumably helps to avoid sneaking in knowledge based on indexicals.

a hidden indexical, linking the conclusion to the world of utterance (i.e. the actual world). After all, someone wishing to use APK can only use it validly in her world, though there is no explicit reference to her world or her as the believer which satisfies the condition.

Oppy says that one might object that we “simply take it for granted” that we are talking about the world of utterance when there are no explicit operators or indexical elements. He says, however, that this is irrelevant since it is a pragmatic concern; logically, we must take such indexicality into account. Oppy suggests the following representation of APK, and thus formalization of (M):

$$Bxp \rightarrow p$$

Therefore, $p(\partial)$,

where (∂) is an operator which fixes the world at which p , and thus the whole argument, is to be evaluated as the world of utterance. Therefore, Oppy concludes, Williamson’s argument provides no reason to think that one can separate the contingent *a priori* from indexicality (193).

In “The Contingent *A Priori*: A Reply”, Williamson responds to Oppy’s objection.⁴ Williamson argues that APK is not an accurate representation of (M), and that APK itself is problematic (219). Williamson writes, “[I]f p is false and believed by no one, APK will take you from the vacuously true supposition $Bxp \rightarrow p$ to the false supposition p .” Williamson says that the following would be more similar to (M) and would also produce indexical-free examples of the contingent *a priori*:

(MAPK) Given the belief that if someone believes that P then P , believe that P .

He remarks that both (M) and (MAPK) should be understood, not as inference rules, but as “something like abstract mechanisms for generating beliefs.”

⁴ Analysis, 48.4, Oct. 1988 (pgs. 218-221)

There are two problems with Williamson's remarks here. First, he is operating with a rather radical notion of the *a priori*. As Fitch points out, if our experience is used to justify our belief in the proposition, rather than simply help us acquire the requisite concepts, then our knowledge should not be considered *a priori*. Thus, knowledge produced by (M) and (MAPK) is not *a priori*.⁵ (MAPK) is suspect for an additional reason. The belief 'If someone believes that P then P' could be false. For instance, I could believe that if someone believes that pigs can fly then pigs can fly. In this case, (MAPK) would generate the false 'Pigs can fly'. Thus both (M) and (MAPK) fail to be truth-preserving.

One might also worry that the imperative mood of (M) and (MAPK) is masking some sort of indexicality (that is, that it is a trick for hiding the indexicality that would be clear if (M) or (MAPK) were put in propositional form as part of a deduction. However, since (M) and (MAPK) are belief-forming mechanisms rather than steps in deductions, Williamson's examples do not make use of indexicals in the way Oppy believes it does. Therefore, while there may be reasons to be worried about Williamson's account, they are by no means decisive rebuttals of it.

Williamson notes that Oppy's indexicalized APK suffers from the same problems as the version without indexicals and, as a result, fails to be truth preserving (220). If, however, one tries to show that (MAPK) fails to be truth-preserving in the case of the subject-less world this attempt will fail because the input, 'If someone believes that in *w* there is at least one believer then in *w* there is at least one believer,' is itself false.

Williamson addresses a possible concern that Oppy mentioned but did not dwell on. What of the objection that it is questionable whether someone who does not know that he is a believer understands 'There is at least one believer'? Williamson writes,

⁵ It is possible that Williamson's thoughts about the nature of the *a priori* stem from his Reliabilist position. However, since the other authors we've discussed all seem to accept the more traditional notion of the *a priori*, it is outside the scope of this paper to investigate the case for Williamson's notion.

“What should also be noted is that even if a negative answer were correct, it would constitute no objection to my argument. For it would not show my *a priori* knowledge (with understanding) of the contingent truth that there is at least one believer to be indexical-dependent in any sense not applicable to my *a priori* knowledge of the necessary truth that all believers are believers.”

One could, of course, argue that we cannot know ‘All believers are believers’ *a priori* because of the sort of experience necessary to acquire the concept ‘a believer’, but this seems implausible, and would undermine many of the traditional examples of the *a priori*.

Conclusion

While Oppy’s objections to Williamson’s examples are off the mark, there are reasons to doubt that his examples give us examples of the contingent *a priori*. Both (M) and (MAPK) fail to be truth-preserving in worlds without subjects, albeit for different reasons. Furthermore, we could at least question whether the examples are really indexical-free because of the imperative mood. It would seem, therefore, that Williamson does not give us a reason to believe that the contingent *a priori* can be separated from indexicality.

CONCLUSION

In what follows I want to briefly review each of the sort of candidates considered, summarizing why they are or are not true examples of the contingent *a priori*. I will also point to the ways in which the failure of the earlier candidates shaped the formation of the later ones.

The “in corrigibility” examples were dismissed rather quickly by Fitch. The problem with this class of examples is that they do not qualify as *a priori* truths. They all depend on experience in order to provide justification for belief in the proposition in question. While even legitimate examples of the *a priori* depend on experience, it is to acquire the concepts involved rather than justify belief in the proposition.

The Kripkean examples (the “Standard Meter Bar”, “Neptune”, etc.) fail to be examples of the contingent *a priori*. The main problem with this sort of example, revealed by Donnellan and Fitch, is one of the results of the act of rigid designation (that is, the stipulative introduction of the name involved). The name lacks sense, so it is impossible to know what the sentence means without having knowledge of a particular (the referent); thus, we cannot know the proposition *a priori*. The upshot of this sort of candidate is if we could know the truth the proposition expresses, the rigid designation allows us to say things about a particular that are true *a priori* in this world and false in some possible worlds.

To avoid the problems with the Kripkean examples, some have suggested examples using ‘actual’ and its variants, which allow for rigid designation without robbing any of the terms of their sense. These examples hang on a distinction between the world that determines the extension of the predicate or truth of the proposition and the world at which the proposition is to be evaluated. While Bostock tries to show that the utilization of this distinction requires changes in our system of modal logic and a dissociation of the notion of ‘necessity’ from “truth in all

possible worlds”, I show that his assertions are questionable at best. In addition, whatever merit his observations have applies only to wide-scope uses of ‘A’, leading me to suggest a candidate that relies on a narrow-scope use of ‘A’: ‘All actual geniuses are geniuses’. I also dismiss Bostock’s ‘If there is exactly one object that falls under the predicate, then it is necessary that there is no more than one’. To understand the sentence one must understand the rigidified predicate in question. However, one cannot understand it *a priori* because, like the Kripkean examples, it lacks sense, and Donnellan and Fitch show us it would take knowledge of the particulars involved, something we can only have *a posteriori*, to understand the predicate.

I then re-consider objections by Donnellan, Kitcher and Bostock, demonstrating that ‘All actual geniuses are geniuses’ can be known *a priori* and that knowledge of this truth produces more than just linguistic knowledge. In response to the objection that perhaps the meaning of the sentence is still unclear, I provide a viable analysis that utilizes a distinction between knowledge by description and knowledge by acquaintance. This distinction helps reveal how the current candidate differs from the former ones. The previous candidates involved proper names. Since proper names are singular referring terms, more is required to have knowledge of the referent of a proper name than is required for a definite description, a denoting expression. This helped us see more clearly why the previous candidates failed where the current candidate succeeds.

The paper by Davies, while not giving us a reason to doubt our current candidate, helped us under the trick being accomplished by ‘actual’. By allowing us to vary the world of evaluation, ‘actual’ and its variants increases the power of our modal system, allowing us to assert and evaluate things we could not before. It is the increased power that allows for examples of the contingent *a priori* to be produced.

Williamson, wanting to separate the question of the contingent *a priori* from indexicality, sought to offer an indexical-free, contingent, *a priori* truth. However, as we saw, his examples failed, strengthening the case that it is the special sort of indexicality of ‘actual’ that allows for examples of the contingent *a priori*.

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BIOGRAPHICAL SKETCH

Daniel Carter McCain was born on July 16, 1982 to Daniel Ross McCain and Doris Carter McCain. He was raised in Jacksonville, Florida and graduated from Englewood High School in 2000. He also attained the rank of Eagle Scout in the Boy Scouts of America. Carter, as he prefers being called, attended the University of South Florida and then the University of North Florida, where he graduated *cum laude* with a B.A. in philosophy in 2004.

After graduating from the University of Florida in 2006 with an M.A. in philosophy, he will marry Karen Garito and transition into professional ministry with the Graduate and Faculty Ministries branch of InterVarsity Christian Fellowship. His long-term goals are to attend Seminary, attain an M.Div., and to eventually serve in a pastoral role at a local church.